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THE TRADER.

TORONTO, ONTARIO, MAY, 1882.

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Editorial.

SHARE ALIKE.

In view of the want of an Insolvent Act, the bill introduced by Mr. Beaty, M.P. for West Toronto, providing for the equitable distribution of an insolvent's assets is both timely and well considered.

As things stand at present, an insolvent is practically able to elect which of his creditors he will indemnify against loss, by giving him preferential security and making the others "pay the piper." If he is honest enough to refuse to be a party to any such disreputable transactions, his estate is practically at the mercy of the first creditor who likes to sue him and get judgment. In any case it is the first come that is first served, and the creditors who have their accounts closed by note are in the delightful position of having to stand quietly by and see their more fortunate competitors walk off with their rightful share of the estate. This is not justice, and the sooner this condition of things is changed the better it will be for both debtor and creditor alike.

Every wholesale merchant will agree with the proposition that when a dealer fails, his estate should be divided *pro rata* amongst his creditors, but while conceding the truth of this principle, few if any of them are generous enough to carry it out practically, especially those who have the start of their competitors in any bankrupt estate.

The man however who will laugh at you when asked to give up his security and rank as an ordinary creditor in such a case, sees things in a very different light when some one else has the start of him

and he is out in the cold. Then it is that he is prone to mourn man's inhumanity to man and to wish that the Insolvent Act, bad as it was, was in force again. Mr. Beaty's idea is to force merchants to do, what most of them admit they ought to do in all cases of insolvency, that is, to divide the assets of the insolvent in proportion to the amount of the claims. The bill does not provide for the discharge of insolvents or anything of that kind, its object is simply as stated above, and for this reason it should receive the support and encouragement of every thinking merchant.

If we are not to have a practical Insolvent Act it is patent to everybody at all acquainted with the present state of trade that some such protective measure as this is a necessity. Every day instances of the most glaring description come to light in which insolvents legally ignore the rights of their creditors and place their assets where they will get the most benefit from them.

One of the most glaring instances of the injustice of the present system, or rather want of system, is that of G. Morrison, a well-known retail dry goods merchant of this city. Mr. Morrison appears lately to have discovered that he was in insolvent circumstances, his liabilities amounting to about \$60,000, and his assets to less than \$40,000. His principal creditor is the firm of Stewart & McDonald, of Glasgow. To this firm and their representative in Canada, Morrison is said to owe nearly \$48,000. Outside of that he is indebted to Toronto and Montreal houses to the amount of some fourteen or fifteen thousand dollars. Before these other creditors were aware of anything out of the ordinary course of business having occurred, it turns out that the principal creditors, Messrs. Stewart & McDonald, have judgments and executions in the Sheriff's hands for the full amount of their claim. These executions will, of course, exhaust all Mr. Morrison's means, and the other creditors have no prospect of recovering one cent, unless they succeed in setting these executions aside, which in the present state of the law, it is very unlikely they will be able to do. All the other creditors profess a willingness to have Mr. Morrison's assets rateably distributed, but there is no means by which they can have this done.

This case of Mr. Morrison's is no exceptional one, but a fair sample of what

is transpiring every day in our midst.

Fortunately the country is prosperous, and the number of failures is proportionately small to what it formerly was, but if the samples are any criterion, they indicate that a mercantile reign of terror would set in upon us should the next era of depression find us without a Bankrupt Act. On the principle that "half a loaf is better than no bread" our merchants should use their utmost endeavors to help Mr. Beaty's law through parliament and have it placed upon the statute book as speedily as possible. Its effect would at least be salutary, by putting all unsecured creditors on a level, and taking away from the insolvent the greatest incentive he has at present to commit a dishonest action.

CAPITAL V. LABOR.

The struggle between Capital and Labor at present going on in many parts of this country is but another example of how easily the unthinking masses can be led away by demagogues to their own detriment. This question between Capital and Labor is no new one; for hundreds of years it has periodically come to the surface, only to be settled as the exigencies of the period demanded. If the working men fully realized that in striving to carry out their designs they are combating one of the first principles of mercantile economy, we think that they would look more carefully before they leaped into all the losses and discomforts attendant upon a "strike."

Labor is the working man's capital or merchandise, and like any other merchant he has the unquestionable right of selling it to the best possible advantage, and to receive as much as he can therefor. But he must remember that like all other articles of merchandise the price depends almost entirely upon the demand and supply. If the demand is great and the supply small the price paid will be high, if the demand be small and the supply in excess of the requirement, then of necessity the wages will be lower. In other words when work is plentiful and laborers scarce the competition is between the employers or capitalist, and labor is enhanced, but when the contrary is the case, the competition is necessarily between the workman and as a natural consequence the value is depreciated.

This law of supply and demand is a natural law, and trades' unions might as

well ask the sun to consent to rise in the west and set in the east as to expect that they can by any combination effect any radical change in its workings.

It is true that in some cases such combinations temporarily effect their purpose, and for a time it seems as if they had triumphed, but with the pressure of hard times comes a scarcity of work and a consequent lowering of wages back to the former low water mark. This constant change of value in labor is as certain as the ebb and flow of the ocean tides, and as we have said before, any attempt to permanently change the effect of this natural law would be attended with failure in either case.

There is nothing antagonistic between capital and labor, if their duties and rights were properly understood. They are naturally dependent the one upon the other, and unless they walk hand in hand neither of them can expect to be properly remunerated.

The striking workmen declare that they are bound to refrain from work until they can get the price they ask for it; this is all right enough as long as they do not interfere with those who are willing to work and take the rate that is offering. The strikers, while desirous of getting the highest price for what they have to sell, very illogically refuse to allow the "Bosses" to purchase the labor they require in the lowest market they can find. Here is the weak point of these strikes, and here it is that they fail in effecting any permanent good.

We think that the employers of Toronto have done a wise thing in "taking the bull by the horns" and declaring that they will only treat with their employees individually and not as a body. The weakest point of these Unions is that they demand that their members shall all be paid the same wages, good, bad and indifferent, it makes no matter, the pay must be alike.

If the Unions would grade their members according to their ability as workmen, the evil would be more than half remedied, but this they refuse to do, and as a consequence the first-class workmen that can almost at any time and under any circumstances command the very highest rate of wages going, are compelled to drag their less skillful but more demonstrative companions up the steep incline of necessity.

There are many other points of this subject upon which we could touch did

space permit, but we will only close with the hope that ere long the workmen of this country will see that capital is neither necessarily oppressive nor antagonistic to labor, but that the rights of each being properly understood and enforced, the result will be a more skillful and higher paid class of mechanics and a better feeling between the employer and employed.

THE JEWELRY TRADE AND THE N. P.

It is perfectly wonderful how differently trade questions appear when viewed through political spectacles. From a Conservative standpoint the fiscal policy of the present Government is all that could be desired to make the country prosperous and happy, while the Reform view of the same question seems to be that it is a most unjustifiable interference with the liberties of the people, and that on account of its oppressive tendencies the country is going headlong to the dogs.

Both of these views are no doubt highly colored, according to the sources from which they emanate, and every candid person must admit, that while both are correct in some particulars, both are also wrong in others, and that the correct estimate probably lies midway between the two extremes.

The extreme diversity of the views upon this subject reminds us very much of a landscape we once viewed in a Scottish museum, which by means of different colored panes of glass, set side by side, the observer was enabled to view in every transition of nature—spring, summer, autumn and winter. Although the illusion was perfect the scenery was always the same; it was only the difference in the color of the glass looked through which make it appear different. So it is with such subjects as this, the facts are always the same and it depends entirely through which party spectacles we view them, how they are going to appear to us.

In the few sentences we propose to write upon the present relation of the jewelry trade and the N. P. we shall, ignoring entirely the green and blue goggles of politics, try and view the question through the clear crystal of mercantile experience.

First, then, has the N. P. benefitted or injured the jewelry trade of Canada? To

this question, we are sorry to say, we cannot give the unqualified assent that we should desire. We are, however, of the opinion that on the whole the present fiscal policy has been favorable rather than otherwise to it, but that its success would have been more real could the Government have been induced to reorganize it in accordance with the wishes of the great bulk of the trade. There is no doubt that to some extent the higher duty on jewelry has in some small degree added to our manufactures, but we do not think that the additional 2½ per cent. duty imposed can be traced the whole of the large increase.

Upon the whole we rather incline to the opinion that the manufacturing jewelry trade has increased and prospered in spite of the tariff more than in consequence of it.

As we said before the addition of 2½ per cent. was not a very heavy protection to our manufacturing jewelers, and we do not think that any one who hesitated to embark in its manufacture under the old 17½ per cent. has been induced by this limited increase to change his mind regarding it. That this increase of duty has had an appreciable effect on the quantity of goods smuggled into this country there can be no doubt, for just in proportion as it increased the value of regularly imported goods, it made the incentive to smuggle all the greater by making the reward better worth while running the risk for. We have always said that if the Government can possibly collect this duty by all means let them levy it, because it will help the Canadian Manufacturer without in any way injuring the importer, but if they cannot possibly collect this duty (and there cannot now be any doubt upon this point) then they should protect the trade by the only method in their power, viz: by lowering the duty to a point where smuggling would cease to be profitable.

We said before we thought the jewelry trade had prospered, not because of the tariff but in spite of it; the real reasons for its growth and prosperity, we think, consist in the fact that the good harvests have largely increased the demand for certain classes of goods that can be profitably manufactured here, and equally important that the long period of depression in the English jewelry trade had rendered business so unprofitable that numbers of skilled workmen were forced to emigrate to this country in search of

the employment they were unable to obtain at home. The demand for their style of work being very small in the States they naturally came to Canada, and hence we find a class of goods made in Canada to-day, by skilled English workmen, which a few years ago we could not have produced at all, much less at a price which would have enabled them to compete on favorable terms against the imported article.

In proof of this we need only adduce the fact that with the exception of gold chains, and probably watch cases, the jewelry manufactured in Canada is mostly of English design and supplants goods of English and not of American manufacture.

For this state of affairs two things are responsible; first that English jewelry being much harder to smuggle than American, the duty levied on it is really more protection in effect, and second, that English jewelry employs comparatively little machinery in its manufacture as compared with the American, and its manufacture is therefore a very much less expensive undertaking.

With our present limited population, and a country divided from the United States for nearly two thousand miles by an imaginary line only, the facilities for smuggling are so great that any person who would undertake to erect and run an extensive jewelry factory upon the American system would need to have a good deal of both faith and capital to make the venture at all, and we doubt that even with plenty of each and experience thrown in, he could make his venture succeed.

The jewelry trade is at present at a critical period of its history; if properly fostered by efficient legislation, we think it will grow to large proportions, but if hampered, its growth will be slow if it grows at all. What is wanted is a wise and careful re-adjustment of the tariff, which while lowering the duty on certain lines will yet compensate for the reduction by giving a *bona fide* protection as far as it goes, and also by lowering the duty on the tools and raw material necessary to its successful carrying on. If this were properly carried out we think a great impetus would be given to the trade. If anything were wanting to prove our point that the present high tariff on fine jewelry is not protection but the contrary, the position of the silver trade would amply establish it. At the time the present tariff came in force, there was

but one factory in Canada for the manufacture of Electro-plated ware, which enterprise has since through mismanagement passed out of existence. To-day two of the largest factories in the United States have important and well equipped establishments in this country, and a Canadian company is at present erecting a third factory which will be equal to either in every particular. By the end of the present year there will be probably two hundred hands employed in those three factories, with an aggregate output of half a million dollars worth of manufactured goods. That this is a direct outcome of the National Policy, no one can doubt, and we unhesitatingly assert that if it had not been for the protection afforded by the present tariff not one dollar's worth of these goods would have been manufactured in this country. Domestic manufactures we had none, and the American manufacturers held almost undisputed possession of this market, from which after a short struggle for supremacy they had completely driven their English competitors.

This being the case, it is easy to see that if they had all agreed to remain at home and supply our market with goods manufactured in the United States we would still have been compelled to buy from them because we could not better ourselves. The high duty however, made it a paying venture to start branch factories here, even though it required an immense expenditure of capital to do it properly, and the result has been what we have indicated above. But does any one for a moment suppose that these factories would have ever been started if Electro-plated goods could have been smuggled as easily as jewelry. We think not; it is because the bulk of such goods is large compared with their value, that the duty levied is a real protection to the manufacturer.

On the whole as we said at the outset we think the present tariff has favorably effected the aggregate manufacture of jewelry and silver goods in this country. Now as regards the selling price, has the tariff been of any benefit? We think not, but on the contrary, that the contrary has been the effect. In the matter of jewelry it is a fact, without doubt that nearly every line of imported goods is sold as cheap if not more cheaply than before the rise in duty, while in goods manufactured in Canada the competition has reduced the prices in many cases far below the old prices of ant

N. P. days. Thus while the retail merchant and consumer has reaped a decided benefit by the tariff, it has affected the wholesale and manufacturer adversely in the matter of profits, although they have probably been fully recouped for this loss by the excess of business, caused by a better control of their home market. In the Electro-plated ware trade, although a duty of 87½ has really been collected, prices remain as low, if not lower than at any former period. This is to be accounted for by the competition amongst the Canadian manufacturers themselves, also by the fact that American houses that have not got branch factories here have been willing to pay the duty and compete with home manufactured goods in price, in order to keep their hold on this market and afford themselves an outlet for their surplus goods. In this line also, a judicious re-adjustment of the tariff would help our manufacturers largely, and it is to be hoped that the Government will see their way clear to offer all the encouragement they possibly can to these industries, which are not only new but well worthy of cultivation, inasmuch as they employ a large number of skilled workmen, who earn good wages and who are a source of strength to any country in which they live. It is by building up such industries as these, that Canada is to be made a country worth living in, and if we do not want for ever to remain mere hewers of wood and drawers of water to other nations we should see to it, that our young factories get all the real protection we can incidentally give them.

Selected Matter.

THE BRITTLINESS OF EMERALDS.

A case was decided in England a short time since which has considerable importance for those who are fortunate enough to possess valuable emeralds. Dr. Lynn, the well-known conjuror was summoned to make good the value of an emerald ring which had been entrusted to him at one of his entertainments by a visitor for the performance of a certain trick. Somehow or other the stone became broken and the allegation of the plaintiff was that the damage had been done by Dr. Lynn himself, while smashing with a hammer the egg in which the ring was finally found. Now it says much for the cleverness with which the trick

was performed that the plaintiff firmly believed his ring to have been somehow smuggled into the interior of an egg. Of course this was not really the case; the adroit prestidigitator had the trinket elsewhere all the time and only made it appear as if coming out of the broken egg. However there was no doubt about the stone being broken, and the sole thing, therefore, was to ascertain how it came by the injury. Only at one stage during the whole trick was the ring subject to the slightest violence, and this was when Dr. Lynn received it from its owner into a receptacle that already contained several coins. If the ring was either thrown in or let drop so that the face of the emerald struck against an edge of one of the coins the blow might have been sufficient to cause a fracture, especially if the stone had a flaw previously. Almost all emeralds are more or less flawed; indeed it is doubtful whether such a thing as a perfectly flawless emerald has ever been known. The chances are, therefore, that the gem in question was in this imperfect condition, and that the concussion consequent upon its fall on the coins completed the fracture. Such, at all events was the judicial decision in the matter, and Dr. Lynn carried the day. But warned by experience he now always makes an exception in the case of emeralds when he is asking the loan of a ring. Not all the magic of the conjuror's art can piece together a fractured precious stone: that feat beats Dr. Lynn himself, marvelous as are some of his manipulations, and it is just possible that some county court judge might hereafter believe, as did the plaintiff in question, that this Piccadilly Wizard has the power of wafting trinkets into the interior of unbroken eggs. Emeralds will probably play no further part in conjuring performances *London Globe.*

THE DEMAND FOR THE ANTIQUE.

"We do considerable trade in June and July," said a dealer. "People often come in from the watering places to get the first chance at any good things we may have discovered at the May auctions. It takes us some time to patch them up to suit the market. Yes, there is always a certain demand for these worm-eaten but pathetic relics of the infancy of the republic. We sell to many nice people, who have a taste for the ancient and honorable in furniture, and then we have another class who buy freely and pay high

prices. I refer to the newly rich. During the past ten years many of them have taken a kind of dislike to the word 'shoddy'; they have found out what it means, you see. As a consequence there arises a regard for the 'old antique,' as they call it, which increases our sales and raises our profits on everything classical and rickety in the way of furniture and decoratives. Folks that cannot show a long line of ancestors make up for it by good collections of not strictly reliable tables and chairs." "Is it in men or women that this mania predominates?"

"Women. Men get the fever, second-handed like, from their wives. We have to be wide awake in selling, for we can't make sales without asking high prices. Some months ago a hostler came in with an old rag of a rug to sell. It was large, but an ugly, queer, faded-looking thing, evidently a worn-out imitation of those Persian or Turkish mats which look as though they had been dragged through some retail shop. I gave the man a dollar for the article, and my porter gave it a half hour's experience with a club, then I cut a long breadth out of the threadbare centre, squared the ends, and put a carpet sewer to stitching the pieces together, adding of course a heavy black fringe. Within a week two ladies called, and being of the new artistic school, they, of course, picked out the mat—the ugliest thing in the shop. How tender in color, said one, and she about hit it. It was tender in other respects, too, if she had only known the fact, 'A precious relic indeed,' said the other; 'Is it Moslem, sir?' 'Pure Moslem, ma'am,' said I. 'all wool—comes from the Adams family.' 'What is the price?' she asked. Now I'm an old dealer, but I hesitated for fear I should not ask enough to impress her. She took my confusion for a reluctance to sell, and from that moment her mind was made up. She took a careless turn around the room, by that time my mind was made up, too. No, no; I would not be willing to state the figure we settled on. It was private rates."

"Do you sell many of these old things?"

"The sales are not very large, but the profits are quite fair, quite fair. Antique furniture is our main hold; it sells right along. It is hard to keep up a really good stock. Here is a fine old set—all mahogany. I had to pick that up piece by piece, and some of it was pretty well smashed up. You see, it is finished in a peculiar style; all the table and chair legs are mounted on a lion's claw holding

a brass ball—handirons to match. It's very rare and valuable—worth \$1,000, some call them Hancock's."

"After the General, of course—so solid and heavy?"

"Oh, bless you, no. After old John Hancock, Governor of Massachusetts, and signer of the Declaration of Independence. There have been at least a thousand sets of that respectable old gentleman's furniture sold here and in Boston. Mine is the only original set, and this is why I have taken the liberty to carve a rudimentary H on the the back of the roomiest chair. Every perfect set contains the old patriot's favorite chair. We always put a handsome silk band across the arms because we wish to retain for the purchaser the sole right to sit in it. This fine old piece is the chair known to have been used by Gen. Howe during his somewhat precarious residence in Boston at the revolutionary period. I have two letters strictly authenticating it. I regret to say, however, that from the number of Howe chairs in the market, that officer must have spent most of his time in moving from one chair to another, and done considerable more sitting down than fighting. This one is genuine.

"Certain lines of revolutionary articles are always good; people are only too anxious to believe in them. Washingtons, however, are difficult to sell. The public must draw the line somewhere, and its generally at Washingtons and Jeffersons. A dealer spoiled the market for Washingtons. You see he sold a secretary with a contemporary certificate, and some fool held it up to the light and found the water mark to be 1850. Such manifest rascality injuries' business; it wound up the Washingtons, and I had to mark down a Martha Washington bedstead to an Aaron Burr. I did sell a Jefferson hat stand three years ago, but it stretches an honest dealer's reputation to make many ancient sales. Mayflowers I cannot conscientiously handle; no amount of swearing will make them go. De Witt Clinton and Hamiltons are all sent to Boston just now, and they sent us B. Franklins and Adamases, all having ancient certificates and Boston post-marks—in short, the most reliable evidence. Some of the letters, you will observe, are pasted under the seat. Here is something from Philadelphia—a chair which belonged to the honored Penn. See its strength and capacity—evidently made to order. Now here is the original which

Nathan Hale sat on before his ex—"

"I see. Have you any sale for foreign goods?"

"Yes, but it doesn't do to keep more than three or four distinguished foreign articles in sight at a time. There's some furniture our public cannot swallow easily. As a rule, though, it is safe for a dealer to act upon the principle that his goods are as likely to be as authentic as not. If he doesn't know to the contrary, it is fair to affirm that his articles are what they look to be. Very many buyers, though, don't care for relics; they want respectable old furniture that looks as if it belonged to a wealthy grandmother. Here and there you've got to remark that an article was found in—well, almost in Julius Cæsar's garret. I had to sell a Maria Stuart sofa the other day. I had it laid out for a Hannah More, but had to mark it out to suit."

"The sources of supply—that is for genuine goods—is getting weaker and weaker. Grand-fathers' clocks, for instance, of good style and in fair order are scarce. I sold my last one for \$235. The customer told us plain out that he wanted something that showed 'ancestry,' and we let him have it. The New England States have been travelled through and through for them. Once in a while one turns up. The old carved book-cases and chests of drawers, mounted in genuine old-time brass, can be had now and then. Carved oak mantel and chimney pieces, tiles, tapestries, etc., are good when you can get hold of them. One trouble is growing weaker every year. We cannot get anything like full sets. Sometimes we have to wait a year or more before we can decently complete a room. Such collections bring very high prices. I know of one that fetched \$2,200. As for most of the ancient bric-a-brac, it should be regarded with suspicion. Revolutionary teapots were once a leading article on account of the firing of the tea overboard. But I regret to say that the demand was broken up by an unprincipled dealer whose fraudulent methods knocked the life out of what was once a very salable article.

"Yes, personal relics are to be had. Genuine ones are rare. There are dealers, though, who will sell you anything you want from a Gen. Putman sword to the bull's-eye repeater of a delegate to the first Congress. These last articles are known to the trade as 'orphans.'

"Oh, don't speak to me about manufactories of our goods. It is most awful

to think of. Yes, sir, I know two factories where its done. It's an insult to liberty."—*Jewelers' Circular.*

THE BREAKING OF SPRINGS.

Much has been said about the breaking of springs and their causes, but the subject remains ever new. A correspondent in a German newspaper gives the following views:

Every watch spring will finally arrive at the period when it will break. Repeated concussions will burst a cannon, break an axle, and cause the breakage of a rail. Caused by the unceasing bending to and fro, of a piece of metal, its cohesion will be destroyed, and it bursts or breaks. Since from the preceding it cannot be expected that watch springs are an exception, we may only consider what means will hasten or retard the final breakage. We may specify the following points:

1. Hardness and quality of the steel;
2. dimensions (measure);
3. treatment;
4. change of temperature;
5. crystallization, decarbonization, and electrical influences.

1. Steel is composed of iron and carbon. If we heat it in the fire for the purpose of hardening, the carbon endeavors to disengage itself. In this condition we suddenly plunge it into some cold fluid; the carbon crystallizes, penetrates the iron with its diamond-like molecules, and the steel becomes so hard as to cut glass. This is a practical reasonable theory, and undoubtedly the true one, since the microscope can substantiate it, and we will accept it for want of a better.

If we temper the steel blue, a retrograde chemical action takes place. The circumference of the steel increases a trifle, and it is, as it were, enveloped in an impenetrable coating, within which the molecules or atoms arrange themselves. This imparts the elasticity. When this extremely thin colored envelope is removed, a part of the elasticity is lost. Hence, a blue spring has more power of tension than a white one.

In accordance with the unequal disposition of the carbon in steel imperfections can be inherent in the spring, and an undue hardness is produced in any one or more of its parts. Such imperfections may also be engendered by an unequal heating, so as to disturb the local proportions of the carbon. Defects of this nature cannot be detected by the eye, and the watchmaker can only obviate the breakage of springs, due to such bad

treatment, by using those of a recognized good standard.

2. One proportion of spring dimension is preferable to the other. The use of a broad and weak spring is preferable to that of a narrow and strong, and by right proportions, the like power may had.

A thin steel at bending does not suffer a displacement of its atoms as much as a thick one, because the rounded side of the first is nearer, to its fulcrum, or the point around which it bends or moves. A thin piece of glass may be bent, while a thick one shatters with the least attempt. A recommendable proportion of the spring would be a gradual decrease of dimension of its coils, as they would more concentrically accommodate themselves around the core; this only applies to movements with fuzee; the best form for movements with toothed barrel is an equal thickness throughout its entire length.

2. When we wind a spring close around the core, we obtain more coils than it has when at rest against the barrel wall. The difference in the number gives us the revolutions which the spring will make when being wound.

If the space between spring and core is large, and we made use of its entire power, or, in other words, we do not use a fuzee and stopwork, the elasticity of the spring would be increased, also the danger of breaking, than if less room were at disposal.

The use of the whole unconfined spring power produces friction of its coilings by the tightened elasticity, destroys the colored lamina of the spring blade, and thus lessens its elasticity, the surface becomes porous, and inclines the spring to breaking.

Also the same defect is often produced by too strong a winding of the spring, both in movements with fuzee and in those with toothed barrel and stopwork. This is often done for the purpose of overcoming a cramping or friction in the movement, or some other error, a correction of which is very difficult, and it is sought by this means to conquer it by an increased power of spring; sometimes it is intended to produce the greatest possible balance vibration. This doubtful remedy is oftener the cause of a spring breaking than all the others taken together.

The following is a right proportion of the spring: 14 coils (never less than 12) must lie within the spring barrel: the empty space between the spring and the

core must amount to fully one-third of the barrel diameter, and the core must always measure one-third; it should be fused form, and with the beginning of the first inner spring coil, be a complete circle, in order to impart as concentric a motion as possible. A protruding core hook is to be avoided, and that of the barrel must be kept as low as consistent. If all these conditions are complied with, the spring will make about six revolutions, if wound up to within $\frac{1}{4}$ or $\frac{3}{4}$ turn, and there is obtained for a toothed barrel, making four turns, a spring power in its best attainable proportion.

The French pendulum clockmakers have the senseless habit of making the spring arbor hook as projecting as possible, as if experimenting to find out how much the spring would resist. I can explain the proportionately few breakings of such springs only from the reason of their great breadth and thinness, which also protects them against an undue expansion, conjointly with the lubricating, gum like oil, which protects them against any injurious effects of friction in its coils. Finally is the careless treatment and the putting in of the spring with too small a core often the reason for a subsequent breaking.

4. If a spring in a barrel with stopwork, without making use of its duty, is wound to its utmost expansion, and the temperature would suddenly change from heat to cold, a sudden snapping, owing to the molecular change of the steel, would be inevitable; even if the spring were not wound to its utmost, a break may easily occur, because the condensation of the steel takes place suddenly, consequently a change in its outside molecular arrangement; it is well known that a hot lamp chimney will suddenly shatter when exposed to a cold air draught. A breaking of the spring consequently will occur most frequently in spring, fall and winter.

5. All metals subjected for any length of time to tension, crystallize, and exhibit an inclination to return to their previous crude condition. When this happens, they part with their cohesion by exhaustion, and a separation of the molecules takes place sooner or later, in due ratio with the sum of the tension to which they were subjected. Since steel, however, possesses greater cohesion than nearly any other metal, it would resist this natural law longer, if other powers did not combine to decarbonize and consequently to ruin it. The main factors producing this change are heat and electricity.

One is permitted to say heat is electricity, and electricity is heat. Both expressions are synonymous. All metals contain latent heat and latent electricity, which may be excited by nature, by chemical influences, and by friction.

The main factor in an electric machine is a glass plate (isolator) on which by friction an electric current is generated. The same is produced by the friction of a hand on the watch crystal. If of steel, it will be partly destroyed at the point of contact, betrayed by the rust which is formed at this place. This rust is generated by electric heat. The friction of the coils of a watch spring against one another, also engenders electricity, especially in warm weather, when it is assisted by the peculiar condition of the air. The steel becomes decarbonized hereby, and thus is induced the unaccountable, mysterious breaking of the spring during hot weather. A balance spring hardened in fire suffers by its inelastic condition an inner friction of its molecules, hence the tardation of rate during very hot electric weather. Different individuals are better or worse conductors of electricity, hence the difference of the rate of one watch, when worn in succession by different persons. The more humidity a body absorbs, the better a conductor of electricity it is; whence a blue spring with closed parts is not as good a conductor as a white and porous one.

Galvanism, or Voltaic electricity, is generated when two different metals touch each other, and one is influenced by an acid. A brass spring barrel with a steel spring and an oil containing acid together constitute a galvanic battery, set into action by heat. The less acid the oil contains, the less is the quantity generated, but sufficient to keep the spring slippery, and the less is the danger that free galvanism is developed; but the air often furnishes an acid (humidity) causing the battery to become active. Heat is produced by this, and the metal is ruined. If chronometers and watches did not contain so great an amount of brass, and consequently so active a conductor of electricity, radiating it into space, it would perhaps be difficult, to even have a time measure with a balance spring. A marine chronometer is better protected than a watch, because surrounded by bad conductors, or good isolators; from the moment forward that a watch taken from a cold room comes in contact with the heat of the body, the electric current begins. Springs wrapped with brass

wire and oiled with the common olive oil, become so vitreous in one or two years in the tropics that they break like glass. This is my own experience.

Those who wish to inform themselves farther on this point, I would recommend a study of generation of friction or galvanic electricity by steam engines.—*Jewelers' Circular*.

BUSINESS CHANGES FOR APRIL.

P. Taylor, jeweler, Oshawa, Ont., advertising his business for sale; Ridsen Bros., hardware, St. Thomas, Ont., have sold out; Johnston Bros., jewelers, Toronto, dissolved, Geo. T. Johnston continues; E. Rousseau, jeweler, London East, Ont., cleared out; Chas. McKenzie & Co., hardware, Sarnia, Ont., style now McKenzie, Milne & Co. Wiberg & Ashdown, hardware, Stonewall, Man., dissolved. Alf. Ashdown continues alone; M R Counter, jeweler, Seaforth, Ont., offers business for sale; Wm. Clegg, hardware, Blyth, Ont., sold out to Chas. Hamilton and removed to Brandon, Man.; E. Graver, hardware, Barrie, Ont., advertises business for sale; A. E. Kemp, hardware, Montreal, sold out to M Philbin; L Atkinson, jeweler, New market, Ont., assigned in trust; J. F. Austin, fancy goods, Peterboro, Ont., sold out to C. B. Routley; John Egger, jeweler, Montreal, failed; D & L McIntyre, hardware, Lucknow, dissolved, David McIntyre continues; Jos. T. Cote, jeweler, Montreal, failed; R. J. Butler, jeweler, Ottawa, Ont., gone to Winnipeg.

BUSINESS NOTES.

MR. HENRY SMITH, of the firm of Smith & Fudge, sailed for England on Tuesday last.

A SOBEL jeweler, by name of J. B. A. Darche, has left without notifying his creditors or settling his liabilities, which amount to \$800 or \$1,000.

MR. R. H. SMITH, the well-known saw manufacturer of St. Catharines, on the occasion of his return from Mexico, was entertained at a banquet by his employees.

MR. W. G. H. LOWE, of the firm of Zimmerman, McNaught & Lowe, leaves for England and the European markets in about two weeks. His many friends in Canada will wish him *bon voyage* and a safe return.

We are sorry to learn that Mr. Gulp, wholesale dealer in watch material in Toronto, was suddenly taken ill last week and compelled to lay up for a few days. He is now fully recovered and able to attend to business.

MR. FRED. MONSE, the well-known employee of Messrs. L. & M. Samuel & Benjamin, was presented with a handsome gold-headed cane on the occasion of his leaving the firm for the purpose of starting business in Winnipeg, Man.

A COMPANY has been formed for the purpose of manufacturing locomotives, railway cars, etc., to be known as the "Canada Iron Works Co." with works at Hochelaga and a capital of \$250,000. Some prominent names are attached to the application for charter, we note among others Messrs. Jacques Grenier, A. A. Trottier, H. A. Hogel, L. H. Senecal, A. Davis.



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.



New York, August 1st, 1881.

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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.

Mr. R. H. MOODY, the well-known bankrupt stock dealer, has entered an action against one of the Winnipeg papers for alleged libel in reference to the Marcotte affair. The libel appears to consist in the fact that the paper in question published Marcotte's confession without comment.

THE widow of the late Mr. Henry Mulholland, formerly a member of the insolvent hardware and iron firm of Mulholland & Baker, has presented a petition to the Insolvent Court claiming \$95,000 out of the real estate of her husband under some old law, which it appears is still in force.

We had a call a few days ago from Mr. A. W. Thompson of Prince Arthur's Landing and Winnipeg. He reports prospects for business good in both places and thinks that when the C. P. R. is fairly running between Prince Arthur's Landing and Winnipeg it will make things hum in the former place. We think he is right.

We had the pleasure of a visit a few days ago from Mr. Daniel Storn, manager of the New York office of the Chicago Watchmaker and Metal-worker. Mr. Storn's visit to Toronto was a mixture of business and pleasure, and he expressed himself as being highly pleased with the appearance of the "Queen City of the West."

MR. M. R. COUNTER, jeweler, of Seaforth, Ont., is going to sell his business and purposes removing to Portage la Prairie, Manitoba. Mr. Counter has a fine trade and one of the handsomest and best fitted up jewelry stores in Canada, and any person with capital in want of a good opening in his line would do well to purchase his business. We wish him success in his new home.

JOHN EGGEN, a small jeweler in Montreal, has failed owing to an accumulation of troubles. A partner he had who left him in January was a source of loss to him, since then he has been burnt out, and as he had only paid half his insurance premium the insurance company refuses to settle his claim. The landlord has seized the little balance of stock for rent, and he talks of calling his creditors together to see if some steps cannot be taken to recover his insurance.

MR. JAMES ROBERTSON, of Montreal, is about to establish a branch of his lead and saw business at Winnipeg, where he has purchased a suitable lot and will proceed to build business premises. Mr. Robertson already has branches in Toronto and St. John, N. B., in Canada, as well as one in the United States at Baltimore. Mr. James Tees will have the management of the Winnipeg branch.

It is reported that the Minister of Customs is about to appoint a staff of special agents over the frontier and keep watch for smuggling operators who bring in contraband jewelry and other goods easily imported. These men will be much like the present American Customs agents, and are expected to be very efficient. It is not stated how they are to be paid, but they are expected to work on commission.

THE Imperial Bank of Canada has opened branch offices at Winnipeg and Brandon. An agency has also been established at Portage la Prairie. It is also the intention of the Bank of Nova Scotia to share in the business of the North West. Mr. E. H. Taylor has secured office in the Dundee block, Winnipeg, and will have charge

of this bank there, we are told. The Merchants Bank of Canada opened an office in Brandon a short time ago. It had been previously represented in Winnipeg and Emerson.

THE winding up of the insolvent estate of Della Torre & Co., carrying on business in this city and Montreal, furnishes another example of the way in which assets may be legally eaten up. The liabilities of this concern were \$20,445, and the total proceeds realized from the sale of stock, etc., amounted to \$3,218. Of this sum Lawyers' fees were \$558, Assignee's and Inspector's claims reached the sum of \$594, or together about forty per cent. of the total receipts. After all other expenses are paid the creditors will have the pleasure of receiving just two cents on every dollar of liabilities, or in all \$408.

THE failure of L. Atkinson, jeweler, of Newmarket, is another example of the reckless way in which credit is given in this country. Mr. Atkinson commenced business a few years ago without capital, and by hard work got a foot-hold and began to accumulate stock. With increased stock came increased credit, increased business and increased expenses, and, as if to crown the whole, he launched out into building a brick dwelling altogether too high-priced for his means. The result of this way of doing business could only have one termination, and that to call a meeting of his creditors and ask for their forbearance. This he did last Thursday.

MR. CHARLES ELLIS, representing the firm of P. W. Ellis & Co., met with what might have been a fatal accident about three weeks ago at London station by jumping from an express while going at full speed. Charley says he hardly knows how it happened, but he thinks that he turned at least fifty summersaults before he finally came to a full stop. He was stunned for a time but he soon pulled himself together and finished up the business which excited him to make his flying leap; he has, however, been confined to his house ever since on account of the bruises he then received. This practice of jumping off trains in motion is a most dangerous one, and if any person who wants to know all about it will apply to Charley they will get some good advice on the subject. He says he is done with that kind of performance for the future, and thinks he'll die soon enough without any effort at suicide in that direction.

THE many friends of Mr. J. W. Jackson, jeweler of St. Catharines, Ont., will be pleased to learn that the U. S. authorities have honorably acquitted him of the charge of bigamy preferred against him. No one who knew him would for a moment believe that there was any truth in the charge, still it is gratifying for Mr. Jackson to know that his honor has been so amply vindicated. The only pity is that he should have been compelled to lose time and money in refuting a charge evidently preferred for blackmailing purposes. The following is a copy of the official decision in the case:—

"STATE OF NEW YORK, }
COUNTY OF LINCOLN }

The People vs. James W. Jackson.—There being no sufficient cause to believe the within named James W. Jackson guilty of the offence within mentioned, I order him to be discharged. Signed

H. H. Sheldon,
Justice of the Peace."

We have received a long communication from Mr. A. Brownley of Ailsa Craig, in reference to a paragraph which appeared in our business notes of last issue, regarding a charge of seduction preferred against him by certain parties residing in his vicinity. Mr. Brownley's letter, while evidently not intended for publication, is an explicit denial of the charges preferred against him, and, as we said in our former note regarding this case we must decline to believe him guilty until he has been clearly proven to be so. Mr. Brownley says that the whole story has been trumped up with the desire to ruin his reputation and business, but that it has failed to effect its object. As we said before we can scarcely believe that a man, who for forty years has borne an unblemished reputation, should suddenly have become the unprincipled villain his traducers seek to make him out, and we think that the public will be justified in holding him entirely innocent of the foul charge until his accusers have established its truth beyond a peradventure.

DEATH OF MR. MARCUS ROSSIN.—Last mail brought intelligence of the death of Mr. Marcus Rossin, formerly a well-known and esteemed resident of this city, while on his way to Mayence to visit his daughter. Mr. Kleeman, on entering the train at Frankfort, found Mr. Rossin apparently asleep, with his book dropped on the floor. Mr. Rossin came to Canada in 1840, and after opening business in Kingston, removed with his two brothers to Toronto. Here under skillful and energetic management they built up a fine business, and ultimately opened a branch house in Montreal. In 1851 Mr. Rossin assisted in the organization of the Western Fire Insurance Company, and was one of the earliest directors. In 1854 he and his brother Samuel evidenced their public spirit by building what was then so greatly needed in this city, a really first-class hotel, which is known to this day by their name. After a while the Messrs. Rossin transferred their business to the late Mr. Robert Wilkes, who had learned his business in their warehouse. In 1865 Mr. Rossin decided to remove to Hamburg with his family, where he has since lived in retirement. He leaves a widow and two children, Canadians, both of whom have married and are well settled in Germany. The announcement of his death will be read with regret by his old friends in Toronto.

Our esteemed friend, Mr. Donald D. Manson, formerly of Toronto, but at present representing the Waltham Watch Co. in Australia and New Zealand, has lately been distinguishing himself by exploring a *la Stanley*, his feat consisting in making the ascent of the active volcano of Tongariro in New Zealand. This is the first instance in which the native Maoris have ever allowed any white man to ascend this mountain which they have hitherto regarded as sacred. On making the ascent, when at an altitude of 2,500 ft., it rained heavily, and was blowing a heavy gale from the south-west. On reaching a further altitude of 5,000 ft. a violent hail storm was experienced, and at 7,000 ft. it snowed heavily, and at the same time the wind was so violent that the party were compelled to throw themselves on the snow so as to prevent their being blown off their feet. Mr. Manson describes the crater as being about three-quarters of a mile in circumference, with a cave in the centre which was continually throwing boiling mud to the height of about 500

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feet. The inside of the crater was studded with numerous blow-holes, and a slight tremor of the ground was occasionally felt. As it was too late to return Mr. Manson was compelled to remain on the mountain all night without food or blankets and with very little clothing. The cold was intense, the thermometer registering several degrees below zero. About 2 a.m. the wind abated and the moon rose, when a really magnificent sight was witnessed by Mr. Manson and the guides. The upheaval of mud in the crater and the hissing noises all about are described by the party as being the most weird-like that could be imagined. At daylight Mount Egmont could be plainly seen snow-capped. The ascent and descent, with the time Mr. Manson spent in the crater, occupied 21 hours. He has already made the ascent of the principle mountains in the world, including Kilawea, in the Sandwich Islands, and he says that Tangario far surpasses anything he has yet seen in its grandness and weird-like formation.

WORKSHOP NOTES.

Hold a cold chisel firmly to its cut without removing it at every blow. This will increase the effectiveness of the tool, and there will be less danger of breaking by a foul blow.

To fit a key: Smoke the blank over a candle, insert it in the keyhole and press it hard against the wards of the lock. The indentations in the smoked portions will show where to file.

A CORRESPONDENT of the *Mechanical Engineer* says: "If any of your readers have occasion to weld cast steel let them try spent lime, air slacked and use it just the same as borax; they will find it will answer quite as well and cost nothing.

CRUCIBLE steel is made by melting in a crucible either blister steel, or blister steel and wrought iron, or wrought iron and charcoal, or wrought iron and scrap steel, or, in short, a great variety of mixtures, which depend on the quality of steel to be produced.

Rust may often be removed from steel tools by immersing them in kerosene oil for a few days. This loosens the rust so that it may be rubbed off. Where the rust is not very deep seated emery paper will do, but if of long standing the tools must be refinished.

It has been proved by Mr. Waite's experiments that a highly polished bearing is more liable to friction than a surface finely lined by filing. The lines left by the file serve as reservoirs for the oil, while the high polish leaves no room for the particles between the metal surfaces.

The simplest and cleanest substance for cleaning silver articles is, according to Professor Davenport, hyposulphite of soda. It acts quickly, and is inexpensive. A rag or brush, moistened with a saturated solution of the salt will cleanse even strongly oxidized silver surfaces in a few seconds, without the application of any polishing powder.

To keep machinery from rusting, take one-half ounce of camphor, dissolve in one pound of melted lard, take off the scum and mix in as much fine black lead as will give it an iron color. Clean the machinery and smear with this mix-

ture. After twenty-four hours rub clean with a soft linen cloth. It will keep clean for months under ordinary circumstances.

To harden steel take two teaspoonfuls of water, one-half teaspoonful of flour and one of salt. Heat the steel enough to coat it with the paste by immersing it in the composition, after which heat it to a cherry red and plunge it into soft water. If properly done, the steel will come out with a beautiful white surface. Stub's files are said to be hardened in this manner.

A BRILLIANT black is produced on iron and steel by applying, with a fine hair brush, a mixture of turpentine and sulphur boiled together. When the turpentine evaporates, there remains on the metal a thin layer of sulphur, which unites closely with the iron when heated for a time over a spirit or gas flame. This varnish protects the metal perfectly, and is quite durable.

The mode employed in bluing steel is merely to subject it to heat. The dark blue is produced at a temperature of 600°. The steel must be finely polished on its surface, and then exposed to a uniform degree of heat. There are various ways of heating the article, e. g., over a flame producing no soot, by a hot iron or other heated metal, and by means of wood ashes. A very regular degree of heat is necessary, and wood ashes are often used for fine work.

SCIENCE NOTES.

SHEAR steel is made by taking a high heat on blister steel and hammering it thoroughly. Double shear steel is made by cutting up shear steel, piling it, heating it, then hammering again. The best shear steel is made from the best wrought iron. The shear steels are very useful on account of their toughness and the ease with which they can be welded to iron, and, when of good quality and well worked, they will hold a very fine edge.

A NOVEL pair of scissors has been devised by Herr Sievert of Dresden. The blades are represented by two circular steel knives, which slightly overlap at the edges, and are pressed together by two spiral springs. The knives are fastened to a pair of wooden rollers with India rubber rims, which grip and guide the cloth or paper as it passes between the knives, so that the latter may cut straight. These cutters are carried by two handles or levers which are held in hand, and the cutting is effected by pushing the scissors forward, so as to cause the rollers to revolve.

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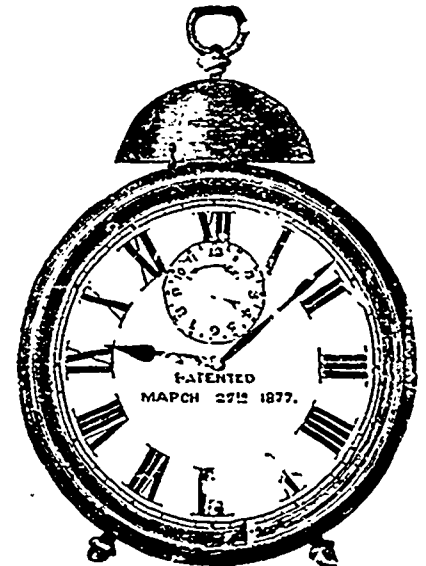
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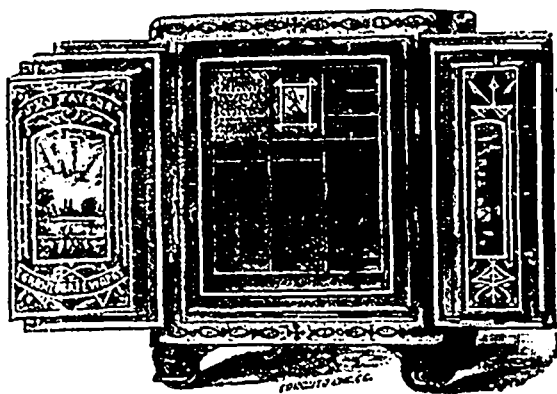
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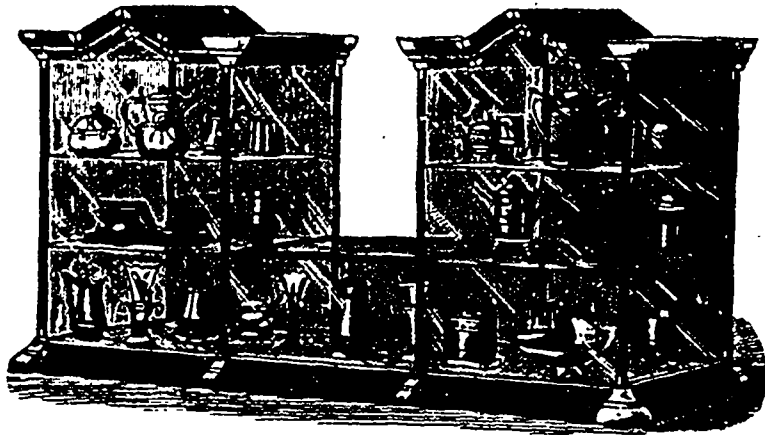
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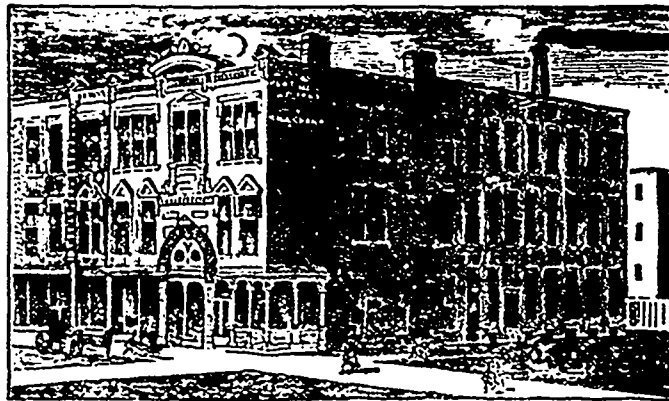
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29 TO 35 ADELAIDE STREET EAST, TORONTO

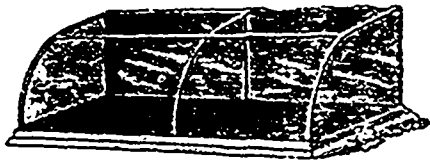
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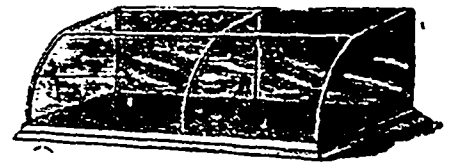
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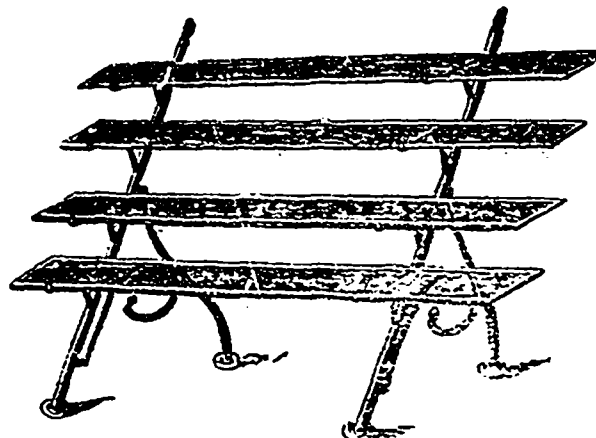
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