THE SOLDERING MACHINE TRIAL

Judgement of Mr. Justice Drake in Short Against Morris.

Following is the judgment of Mr. Justice Drake, delivered in the Supreme court on June 12, in reference to a suit that is of interest to canners.

In this action the plaintiff alleges that he had discovered and was the sole, true and first inventor of certain improvements of soldering machines and particularly a machine for soldering oval cans, and no other person before such time made, used, exercised or vended the said improvement or invention; that he obtained a patent therefore on 16th July, 1897, No. 56,678; that the invention was novel, useful and valuable; that the defendant has been manufacturing, using and selling the said improvement in soldering machines, and asks for an injunction and damages. The particulars of the infringement are that the defendant has taken the substance and gist of the plaintiff's invention, and his machine is a colorable imitation of the plaintiff's patent, the only difference being the substitution of mechanical equivalents for two parts of the plaintiff's combination—one in the means for adjusting the centre of the canholders and the other for securing the proper angle in the solder bath. The defence is a general denial of the allegations in the statement of claim, and that the plaintiff's invention is not novel; that the plaintiff's patent is void because the specifications do not sufficiently distinguish between matters new and old; that they were wilfully misleading; that he was not the first inventor, and that it was not new at the date of the letters; that the Morris roller soldering machine was used in the Lighthouse cannery of the Fed. B. G. C. Co., Ltd., at Steveston, B.C., in 1895, 1896 and 1897; that the Roger soldering machine was used at the Automatic Canning Co.'s factory at New Westminster, B. C., in 1896, and has been used there continuously; that it was a prior invention of a soldering machine for giving lateral and rotary motion to cans of uneven raidus, and that the same was patented in Canada on 10th December, 1895, prior to the date of the plaintiff's patent; that the plaintiff's specifications were insufficient as they did not distinguish which parts comprise the alleged improvements and which parts composed the machines alleged to be improved upon. The plaintiff brought a previous action against the Fed. Can. Co. for using a machine infringing the plaintiff's patent. This is the same machine now in question, as only one machine has been constructed and instead of joining the present defendant as the licensor of the machine used by the Fed. Canning Co., he has brought a separate action. The defendant claimed to be the inventor of a special can holder for soldering cans of uneven radii, and obtained a patent therefor on the 4th day of November, 1898. He manufactured one machine which was used by the above company of which he is president and manager. No other machine has been constructed by him and in the action nominal damages were given and an inquiry directed as to any damages sustained in the year 1899, which were subsequently settled and paid and an injunction awarded. This judgement was affirmed by the Supreme Court of Canada and the ground taken was that the defendant's patent in fact obtained the same results as the plaintiff's machine by use of mechanical equivalents. I am of course bound by this judgment, but in that action the plaintiff's patent was not attacked on the ground of want of novelty and as far as it appears in his petition for his patent, he claims that he has invented new and useful improvements in soldering machines, not known or used by others before his invention thereof and not being in public use. The defendant's first invention was the application of rollers for the purpose of soldering oval cans. This machine was operated by an endless chain and sprocket wheels; but apparently was not satisfactory. As to this machine, I am of opinion that the plaintiff's machine is not only an improvement, but though the object is the same, the results are arrived at by an entirely different construction of known mechanical appliances. Under these pleadings I have to consider what the plaintiff's invention really is. In his patent he says: "My invention relates to improvements in machines for flushing or soldering cans, and its object is to provide such an apparatus, that will conveniently solder flat, oval cans of almost any form so long as the periphery of the same are of roundish form, and do the work with rapidity and despatch."

The validity of the plaintiff's patent first depends on its novelty, that is an essential consideration of its grant. If it is shown not to be novel the grant will be void at common law. Armory v. Brown, L. R., 82 Q., 663.

The patentee must have invented every part of what he claims to have invented, for if any part claimed in the specifications is not new, although the remainder is, the patent is void. King v. Marshall, 5 Bing., N. C., 492. If the contrivance is new, although applied to an old object, the patent is valid; but if the contrivance is old, although applied to a new object, it is void. Losh v. Hague, 1 Webs. R. 297. In the present case evidence was adduced that N. Froyer obtained a patent for soldering the ends of elliptical or oval cans, which were secured upon chucks and automatically fed to a hopper by means of an endless carrier, also for automatically conveying the cans to a suitable flux and turning the cans thereon so as to present the entire edge to the flux, whereupon the cans are carried to a receptacle containing molten solder and finally the soldered cans are automatically released from the chucks and discharged from the machine. Thus the same object is attained by this machine as by the plaintiff's. The Troyer machine is set at an angle and has an undulating rack, a guide channel, a can holder, the support of which moves in the channel and a pinion carried by the support. The can holder is oval in shape and consists of a plate, spring controlled clamps, movably mounted on the plate. The whole machine is operated by an endless chain and spindle. It is a more elaborate machine than that of the plaintiff; but performs identically the same work and practically in a similar way. The plaintiff's can holder is differently constructed, but it is only a mechanical equivalent, for the Troyer can holder. In this view the plaintiff's machine is an infringement of Troyer's machine, and such being the case, he is not entitled to maintain his action against the present defendant.

The scientific and other evidence of practical mechanics show that the three machines use the same well known appliances for arriving at the sought for result with slight variations.

Troyer's machine is set at an angle and has an undulating rack. In the plaintiff's machine the can holder is arranged differently from Troyer's and the machine is set flat by the means of a shackle link and in other respects is much the same. Troyer's machine solders both full and empty elliptical cans and it is alleged works more smoothly than either of the others, and gives better results and is a better mechanical construction, and was the first machine to carry several can holders on an endless chain. The can holder in Troyer's has spring controlled clamps located at the margins of the plate, shanks connected with the clamps, slides connected with the said shanks, a can head mounted to turn on the plate. In the plaintiff's can holder they are secured to spider castings by screws or balls and are self-adjusting by reason of the shank of the spindle loosely passing through a slit.

The defendant's can holder was held to be an infringement of the plaintiff's as a mechanical equivalent so undoubtedly the plaintiff's can holder is a mechanical equivalent for Troyer's. The result is that the plaintiff claims damages for an infringement of his patent by the defendant, while Troyer's patent has anticipated both the plaintiffs and the defendant's patents, and though he has not brought the matter to the test of litigation, in my opinion the existence of this patent precludes the plaintiff from recovering in this action on the ground of want of novelty. And dealing with the further question which the defendant raises that as the defendant is the president and manager of the Federation Canning Co., against whom a judgment has already been obtained with damages, and an injunction awarded, he cannot have the same relief twice over. A patentee is entitled to claim damages both as against the manufacturer of an infringing machine as well as against the purchaser or person using it; but where, as in this case, the manufacturer and user are so closely connected together, that they form one company, they are bound by the order of the court. Although not specifically named in the injunction order, the defendant would be liable to attachment if he knowingly acted in contravention of the injunction. Smith Barry vs. Dawson, 27, L. R. J., 558, and Seaward vs. Paterson (1897) 1 Chy, 545. Therefore no injunction is necessary and no additional damages have been shown.

Judgment for defendant with costs.

(Signed),
M. W. TYRWHITT DRAKE, J.

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LEANDERS WIN FINAL HEAT

Beat Pennsylvania Crew By a Length After a Hard Race.

Henley, July 5.—The Leander Rowing Club crew this morning defeated the crew of the University of Pennsylvania in the final heat for the Grand Challenge Cup.

There was bright sunshine and puffy cross winds blew from the Bucks shore, slightly favoring the Leanders.

The following are the names of the two crews.

Leander—C. A. Wills, bow; H. J. Duvallon, W. Dudley Ward, G. Maitland, C. D. Burnell, J. E. Payne, C. J. D. Goldie, R. Betherington, stroke; C. S. Maclagan, coxswain.

Pennsylvania—R. R. Seane, bow; R. H. Eisenbray, F. L. Davenport, N. Crawther, jr., A. H. Flickwer, G. S. Allyn, W. G. Gardiner, J. P. Gardiner, stroke; L. J. Smith, coxswain.

Both crews at the start showed no trace of nervousness, and were sent away in capital style, the Pennsylvanians rowing 43 to the minute to the Leanders' 42.

At the end of the Temple island the Americans led by three men. At Frawley the time was 3 minutes 25 2-5 seconds, with the Leanders three feet ahead. From there it was ding-dong, a splendid struggle, out of which the Leanders gained inch by inch. The mile was reached in 5 minutes 15 seconds, with the Leanders half a length ahead, which they increased to three-quarters of a length at the Isthmian. The Pennsylvanians made a desperate spurt but it was no good, and two men weakened perceptibly opposite the grand stand.

The Leanders won by a length. Time, 7 minutes 4 4-5 seconds.

"It was a grand race," said coach Ward, as the Leanders crossed the finish line. "We were simply outrowed and have no other explanation to make."

English rowing experts all agree that the result of today's contest was primarily a victory for the English style of rowing.

After the race umpire Pittman said: "I see no reason to alter our style of rowing."

The Leander four rowed a terribly punishing race for the Steward's cup, leading throughout. The Leanders were greatly exhausted.

The prizes were presented at the grand stand immediately after the regatta. Col. William made a capital speech, in which he paid a tribute to the American crew. He said no one who had followed the race as he did on a launch could fail to heartily congratulate the Leanders on today's win, for they met a splendid crew, who rowed them all the way home. "I fail to see, however," said Col. Willian, in conclusion, "any reason why we should alter our style of rowing."

The results today were as follows:

Grand Challenge Cup—Final heat—Leander Rowing Club beat Pennsylvania University by one length. Time, 7 min. 4 4-5 sec.

Thames Challenge Cup—Final heat—Trinity Hall, Cambridge, beat Kingston Rowing Club by one and a quarter lengths. Time, 7 min. 32 sec.

Silver Goblet—Final heat—Balliol College, Oxford, beat the Belgians easily. Time, 8 min. 50 sec.

Ladies' Challenge Plate—Final heat University College, Oxford, beat Eaton by two lengths. Time, 7 min. 28 sec.

Diamond Challenge Sculls—Final heat—C. V. Fox beat G. Ashe, winning easily. Time, 8 min. 52 sec.

Steward's Challenge Cup—Final heat—Third Trinity, Cambridge, beat Leander Rowing Club by five lengths. Time, 7 min. 54 sec.

Wyfold Challenge Cup—Final heat—Trinity Hall, Cambridge, beat Christ College, Cambridge, by a length and a half. Time, 8 min. 9 sec.

A FOOD FOR BRAIN AND MUSCLE.

Whether it is brain fag, loss of memory, inability to concentrate the mind or bodily weakness and general debility Dr. Chase's Nerve Food will restore your old time energy strength and health. Through the blood and nervous system, it reaches every part of the body and overcomes weakness, irregularities and disease.

MILK PEOPLE.

A New Assortment for Settlement in the North West.

Winnipeg, July 5.—(Special.)—Mr. Ens, of Rosthorn, N. W. T., has received a letter from Russia stating that a sect known as Molekames (milk people) are coming to this country, and will settle in Saskatchewan. There are about 32,000 souls who are likely to come out in parties and settle along the north branch between Rosthorn and Battleford or Round Hood mail station. Mr. Ens has known these people for some years and speaks very highly of them.

LUSITANIA WRECK.

Court Finds it Due to an Unknown and Erratic Current.

St. John's, Nfld., July 5.—The court, which has been investigating the wreck of the Orient Steam Navigation Co.'s steamship Lusitania, Capt. McNay from Liverpool, June 18, for Montreal, which went ashore near Renews just before dawn, June 16, holds that the disaster was due to an unknown and erratic current, which threw the ship 13 miles out her course.

TRICKS OF CRIMINALS

Shrewd Devices by Which They Try to Escape From Prisons.

From New Orleans Times-Democrat.

"In my study of crime and criminals," said a budding criminologist," I have observed one thing which has not been given so much importance by the men who claim to be expert in such matters, and it has afforded food for some rather interesting reflections, so far as my personal taste is concerned. The criminal is an iconoclast. The iconoclasm of crime is one of the most interesting things I have found during the time I have been studying the question. By reflecting a moment we can see that the destructive, tearing-down element is deep-rooted. Nature is iconoclastic. The prattling tot will crush the prettiest of flowers and pick away the petals with utter recklessness, or it would hammer a dainty piece of sculpture into smithereens, or besmear one of Angelo's or Raphael's pictures with extravagant indifference. But to come back to the criminal class, crime is essentially iconoclastic in that it seeks the destruction of some other person's rights by the theft of property, or the burning of a building, or by the taking of life, or by the mutilation of human bodies, as in the case of Jack the Ripper. However, I had in my mind another kind of iconoclasm, the disposition among imprisoned criminals to deface and destroy the things about them. They will smash water buckets, cut and carve the walls, tear up the bed clothing, and do other things of this kind. They are not doing it out of spite, or for the purpose of escape, but just simply to destroy something. I know of one instance where a man set fire to his bed clothing, and then yelled for the jailer to extinguish the fire. When asked why he did it, he said he just wanted to destroy the bed, and hallooed simply to keep the inmates of the jail from being burned to death. I recall another case of a young woman who had been arrested on a serious charge. She was a born criminal. Some time during the night she had torn her clothes into shreds, and when the desk sergeant went to her cell he found her perfectly naked. At her feet he noticed a bundle of rags, the torn and tattered remnants of what she had worn. The sergeant thought she had been mad, and had committed the act while in an unhappy mood. But she smilingly told him that she was in the best of humor, but that she just wanted to tear something to pieces, and really got a great deal of pleasure out of it. The prisons of this country are full of similar examples of the iconoclasm of crime in this limited sense, and the public officials who are charged with the enforcement of the criminal law have many opportunities of observing it."

"Crime has made considerable progress in these latter days," remarked an old police officer, "but one thing has impressed me more than any other in connection with the lives of hardened criminals. Of course, all offenders make an effort to escape detection and arrest. This is the first necessary thing with them, and they do all they can to throw the officers of the law off of the right trail. But the greatest talent shown by crooked men has been along different lines. The thing they study most is the matter of escaping after they are arrested. Occasionally they resort to very clever schemes to get out of jail, and occasionally they work them, too. I remember the case of a very shrewd crook who had a female aid, and she was in the habit of visiting the jail every day or so and handling the fellow a basket with lunch in it. The Sunday services in the jail were generally conducted by a man who had white side-whiskers, and he wore a long coat and a slouch hat. While services were still going on one Sunday in the jail, the door which opened into the main body of the jail was rattled as usual when some person wanted to pass out. The turnkey responded, and found a gentleman with white side-whiskers, a long black coat and a slouch coat standing at the door. "I want to pass out for just a minute," he said, with an ecclesiastical air, and the turnkey let him out. Shortly after this the jail services were brought to a close and the real preacher appeared at the door of the jail. The turnkey was paralyzed. At first he refused to let the preacher out, but when he found that he was the real article he let him pass through the door. The preacher remained to clear up the mystery, and to find out who his double was. The truth was quickly learned. The shrewd crook had escaped. Several days afterwards it was found that the woman who had been bringing the apparently harmless dinner pail to the jail was smuggling things to the crook, and in this way she had furnished him with the white sidewhiskers, the long coat, and the slouch hat. The woman had left town with the man she had liberated, and so far as I know they were never apprehended. It was clever ruse, but by no means new, except in the imitation of a preacher, and this new feature of the matter probably disarmed the turnkey and caused him to fail to scrutinize the man closely enough to detect the scheme.

"I know of other cases equally as remarkable," the officer continued, "and probably the most remarkable case was that of a forger who escaped from one jail three times, and had the record of having escaped more frequently than any other crook in the country. Because of his numerous escapes he was closely watched, but his three escapes from one jail impressed me as being out of the ordinary. The first time he got out he walked through the front of the jail disguised as a negro woman. The dress had been slipped in to him by one of the negro women who worked in the jail, and he had secured a soiled hat in the same way, and, as he was a white man, he had used the soot from a lamp chimney to blacken his face. He was recaptured several weeks later. The second time he sawed out. When the officers began to look into the matter, they soon found that he had used no ordinary saw, and in fact they had kept such close watch on him that they knew no tool could have been slipped to his cell. He was again caught. He was a frank fellow, and told the officers how he had gotten out. He had gone back into the jail with a very fine wire saw coiled in the bottom of his shoe. He had used this to file his way out of the jail. Because of the small teeth of the saw, and the delicacy of the tool generally, he was able to do the work without making any noise, and thus escaped detection. But the third time he escaped he took several prisoners with him. It was a novel and dangerous plan. There was an immense sewer running from the jail to the river, a distance of probably 800 or 900 feet. The water was low, and the mouth of the sewer was probably two or three feet below the surface of the river. With two negroes the forger made his way down this sewer toward the river. The water was backed up some distance in the pipe, and several feet back from the river the pipe was completely filled. But the forger took the chance. He dived out through the end of the pipe, and in a few seconds showed on the surface of the river. The negroes followed, and they all escaped. The officers were puzzled, and they never knew how the forger escaped until he told the story himself when he was recaptured. He is now serving out a term of years in the penitentiary of a Southern state, and is probably penned in for good, for an electric wire is strung around the walls of the prison, and he enjoys the distinction of having given birth to this plan of preventing the escape of prisoners. But even now the officials live in dread lest he burrow under the earth, or adopt some other novel plan of breaking out of jail.

LORD RUSSELL'S TRIAL.

He Elects to Have It on July 18.

London, July 5.—The lord chancellor, Lord Halsbury, today informed Earl Russell that he will be tried on July 18 before the House of Lords on the charge of bigamy. The defendant considered the postponement of the trial granted yesterday at a special session of the House of Lords to August 6 was insufficient to enable his lawyers to prepare his defence, and he therefore elected to be tried on the original date, July 18.

KILLED AND WOUNDED.

Butchered to Make a United States Holiday.

Chicago, July 5.—The Tribune today publishes reports from all over the country showing the number of persons killed and injured as a result of celebrating the Fourth of July. The number actually killed is less than last year, being 19, against 30, but the number of injured is considerably larger, the figures being 1,161 against 325.

CAPTURE OF BOERS.

Ninety-Three Prisoners Taken by Gen. Grenfell.

London, July 5.—Lord Kitchener telegraphs to the war office under the date of Pretoria, July 4, as follows:

"Grenfell, on July 1, at Howel, captured 93 Boers and a lot of supplies belonging to Beyer's command.

APPOINTMENT OF NEWELL

Not to Succeed Mr. Hawkins, General Manager of White Pass Railway.

There was considerable street talk yesterday in respect to the appointment of Mr. A. B. Newell, formerly of the Lake Shore & Michigan Southern railway, as manager, with the rank of vice-president of the White Pass & Yukon railway, as announced in the Colonist. There was a rumor to the effect that Mr. Newell was to hold office over the general manager and that consequently Mr. Hawkins had resigned. Mr. Graves, president of the company, was seen at the dock just prior to his departure for the Sound last evening, and he said there was nothing in the report. Mr. Hawkins' time, he said, was taken up along the coast, and the company having added a river service it was necessary to have another man, who could cover the whole country, and Mr. Newell had been chosen.

In regard to the very free criticism of the company's river service, Mr. Graves said Mr. Darling had certainly not made himself popular, if all the reports were true, and this matter would receive his attention when in the North, and if the present superintendent of the water lines could not fill the bill, a change would be made, as the company had every desire to please the traveling public.

President Graves, Mr. Hawkins and Mr. Newell leave Seattle today for the North, and will remain there until the first of September at least.

Friends of Mr. Hawkins said yesterday that it was quite likely he would resign his position and that officials would follow suit, there being considerable dissatisfaction on account of the appointment of Eastern men to the better positions instead of promoting old servants.

Another new office has been created, that of controller, to which A. L. Berdoe, formerly in the auditor's office at Seattle, is to be appointed.

ALL'S WELL THAT ENDS WELL.

Remarkable Tale of a Traveler and a Long Trip Ticket.

W. D. Macdougall, a Winnipeg wholesale merchant, who is making an extended summer tour of the Pacific Coast, in company with E. L. Howell, a Winnipeg barrister, was the central figure of a remarkable adventure yesterday. The two friends had spent a few days in Victoria, and decided to continue their journey. They embarked on the Rosalie for Seattle, and were enjoying the scenic magnificence of the Strait from her upper deck as the steamer swung into her course. Opposite Oak Bay the purser collected the ticket. Mr. Macdougall had one of those long, round trip affairs measuring about two and a half yards, and while he was gathering in its multitudinous folds, it slipped from his fingers, a playful wind sprite caught it and the next instant it was floating gaily away o'er the sparkling waters like some strange sea bird. Mac watched its gyratious till it faded away in the dim distance and then, suddenly aroused to a sense of his loss, shouted lustily, "Stop the ship! I've lost my ticket."

Howell, with that brutal, unseemly mirth which manifests itself in some natures on the occasion of a friend's misfortune, suggested issuing an order for discovery. Some of the other passengers volunteered to form a search party if the captain would lay too and lower a boat, and one excited individual began throwing life belts overboard.

Captain Roberts, when the matter was explained to him, kindly consented to return to the Outer wharf and land Messrs. Macdougall and Howell.

Immediately on landing they hastened to charter a steam launch, and proceeded to scour the Straits in all directions, but darkness fell over the scene of their search ere they had succeeded in discovering anything more than an intense thirst, which they had overlooked in their excitement. They returned dejectedly to town and proceeded to the Driard, where a telephone message from the Outer wharf awaited "the man that lost his ticket."

A lone fisherman, who had been out on the deep angling for the wary sockeye, had found a part of the vagrant ticket—the contract portion to which the coupons are gummed, and therefore the most important—and had confided his find to the watchman at the Outer wharf. Thither Mr. Macdougall hastened in glee and recovered his property. An interview with the agent of the C. P. R. and a short correspondence by wire will set matters right, and the Winnipeggers will proceed on their journey rejoicing.

ON MAGNETIC HEALING.

Much is spoken and written during these times about this mysterious method of treating disease. The most truly remarkable cases of magnetic healing which have come under the notice of the writers have been those in which Dr. Chase's Ointment was used. This preparation seems to have magnetic powers in stopping the dreadful itching, burning sensations of salt rheum and eczema, and when used regularly makes the cure thorough and permanent.

Garden Party.—At the residence of Mr. H. J. Knott, 19 Harrison street, this afternoon, a garden party will be held between 3 and 10 p.m., under the auspices of the Sunday school of the Metropolitan Methodist church. An orchestra will be in attendance, refreshments will be served and there will be games during the afternoon. In the evening there will be a concert.

CAPT. BERNMIER AND HIS PLANS

Canadian Navigator Explains How He Hopes to Reach the North Pole.

Captain J. E. Bernier, whose one ambition in life is to plant the Canadian flag at the North Pole, spoke regarding his proposed expedition before the members of the Board of Trade yesterday afternoon, (June 20), says the Montreal Star.

Enthusiastic, but at the same time calculating; a man who would naturally inspire confidence in anything he might undertake, Capt. Bernier's plan for reaching "farthest North" was listened to with respectful attention, and an unusual amount of interest in the Board of Trade's council room.

Captain Bernier was introduced by Mr. Henry Miles, president of the Board, who spoke of the captain's long experience in navigation. The captain was a master of a vessel at the age of seventeen, and since those days has had command of no less than 46 vessels. Mr. Miles referred to the now unknown boundaries which Canada would be able to claim should the expedition prove successful, and then again there would be the great honor of having penetrated this great and now unknown region.

Captain Bernier, in opening his address, said that it would be an evil day for Canada and Great Britain when these countries ceased to take an interest in such matters. With every natural geographical right, Canada has yet to send out its first Polar expedition. The speaker did not believe in what is known by the term of "racing to the Pole." The elements were too much for even those with strong wills to combat. What was desired was a feasible method of acquiring what had heretofore been unobtainable. His own experience, combined with years of careful study, had convinced Capt. Bernier that getting into the Polar drift in the right position and then drifting along until the pole was reached, or at least until a position sufficiently near the pole was attained to make the rest easy, was the only feasible method. Some routes, heretofore, attempted were filled with stationary ice, which it was impossible to penetrate. However, the experience of the Jeannette and the Fram both went to show that the ice in the Polar Basin did drift in a certain direction, and this led over the pole, if the correct position was taken at the outset. In the case of the unfortunate Jeanette the vessel was not so constructed as to withstand the ice, and then again she did not enter the drift in the proper position.

Capt. Bernier explained that, of course, the primary object of the Jeannette expedition, under the command of Lieutenant De Long, was the survey of Bennett island, and it was this which caused the vessel to make her course as far to the south-west as possible. Among the islands and near the coast the polar drift was not so strong, though that there was a drift is proved conclusively by the finding of relics of the De Long expedition, which in three years had drifted from Bennett island, the place where the Jeannette had been crushed in the ice, to the Southern point of Greenland. This meant that these relics had drifted right across the Polar Basin, and had taken three years to make the journey, thus showing conclusively that the drift was comparatively rapid as well as direct.

Captain Bernier would enter the Polar Basin by way of Behring's Straits. He would choose July as about the proper time, entering the ice between 170 and 175 degrees west (to the the north-east of where the Jeannette entered), as its state may permit, they would push as far as possible in July and August, dropping buoys at intervals to test the drift ice. It is proposed to send up one small balloon each month, with records when the wind suits, so that the world at large may get news of the expedition. Later on in the season, they will, of course, be clasped tight and firm in the ice. Captain Bernier calculates that this ice drift over the Polar Basin will, in the course of three years take him to within striking distance of the pole; then past it and into such a position that he will be able to release himself.

Captain Bernier holds that the wind would favor a vessel entering Behring's Straits, and that the drift in summer was not so great as in winter, when the cold air from Siberia came over the Polar Basin and pushed the ice out into the Atlantic. Another reason, and a great one, for choosing the Behring Straits route was that the Siberian rivers which discharged into the Polar Basin, made of it a somewhat higher level than the Atlantic, and consequently these waters were continually feeding the ocean. In order to drift the vessel must take up a position in deep water, so that she would not be hampered by islands, and the drift would then be more regular, as well as shorter.

While he was of the opinion that they would complete the voyage in three years, still they would go out prepared to spend five years in the ice.

It is proposed to take 14 men on the expedition, including the most competent scientific men obtainable. All hands would live together in quarters specially constructed for convenience and comfort. Under ordinary circumstances, Capt. Bernier did not approve of the plan of all hands sharing common quarters, but on such an expedition as this it had been found to work out most satisfactorily.

After a careful study of vessels which had been constructed for Polar work, he had decided upon the plans of a vessel which in his opinion would meet every requirement. In making these plans they had taken what was best of the Fram, the German ship, Struss, and the English Discoverer, the latter two now being fitted out for Polar work.

The plans of the vessel, designed by the Dundee Shipping company of Dundee, Scotland, were on exhibition on the walls of the council room and were fully explained by the captain. The length of the vessel is 133 feet over all. She is to have a breadth of 36 feet and a draught of 14 feet. She will measure something over 300 tons, and will be capable of steaming 8 knots an hour. She will, of course, be rigged with masts and a full set of sails, so that every advantage can be taken of the winds.

In every respect a specially strong construction had been figured upon. She is so designed that the ice will lift her up and not crush her, as was the case with the Jeannette—which vessel, by the way, was nothing more than ordinary yacht re-inforced from within. The body of the vessel as designed is so rounded that the ice in crushing against her would not get a hold, but would instead push her out of the water. She is to be fitted with no less than a half-dozen tanks, specially designed to keep her afloat no matter what happens. These plans, by the way, have been shown to the Ottawa authorities, and meet with their approval.

Captain Bernier went on to say that he desired nothing out of this voyage himself. The money subscribed would be devoted entirely to the project. It was desired, however, to go out well equipped and this of course meant the expenditure of a considerable sum of money. He calculated that it would cost from $120,000 to $130,000 all told. He had a promise of $60,000 from the government as soon as he raised $60,000 more. The cost would be $120,000 or $130,000, according as to whether the vessel was built on this side the Dominion or in Vancouver. He had about $10,000 in hand, and was therefore short $50,000. He had a promise from Lord Strathcona and Mount Royal that he would do something as soon as he saw that progress was being made.

INFORMATION FOR FARMERS

(Communications to be addressed to "Agricultural," Colonist.)

POULTRY FOR PROFIT.

The selection of stock from which to secure eggs for hatching is most important; in fact is the very foundation for future success. To secure healthy chicks we must have vigorous parent stock kept in good condition and properly mated. All inbreeding must be avoided.

The period of the year to hatch will depend on the variety of the fowl. Remember that it is not well to have birds matured and laying before October or November. With the American breeds, like Wyandottes, it is well to hatch in March, April or May in order to secure the best results in laying for the following winter. While the Mediterranean breeds, which develop more quickly, April, May or even June will be quite time enough.

The method of hatching must depend largely on the size of the flock kept and the number of birds you wish to raise. It hardly seems worth while to employ an incubator, unless you wish to hatch at least something over 100 chicks during the season. But in order to make a substantial return from poultry as a branch of the farm, a large number of birds must be raised, making it necessary to use incubators and artificial brooders. Having placed in an incubator the eggs, and having run the machine for 21 days, according to directions, we will probably have a hatch representing 50 or 90 per cent, or over, of the total number of eggs set.

The little chicks now demand special care and close attention; but let me emphasize the fact that I believe many more chicks are killed by kindness and by being pampered than by any neglect or underfeeding. The active lively chicks with their piercing chirp seem at once to be demanding food, and we naturally hasten to satisfy their appetite, forgetting that nature has supplied them with their first nourishment, which must be allowed time to digest before they receive their first meal. The chicks will hatch during the twentieth and twenty-first days. Keep them in the incubator until the morning of the twenty-second day, when they may be placed in the brooders, keeping the temperature in the hover between 90 degrees and 95 degrees. Scatter some finely broken egg and oyster shells, coarse sand, coal ashes, and charcoal about the floor of the brooder. Brooders generally made about three feet square with an interior hover where the heat is maintained at first to 90 degrees to 95 degrees. Do not place more than 40, or at the outside, 50 chicks in each brooder. These brooders are generally advertised to accommodate 75 or over; but do not do it. The chicks will suffer more from crowding than anything else, and cannot thrive as they should. Feed sparingly at first. Scattering a little dry coarse oat meal, bran or broken biscuit. Upon the second or third day a little finely cut meat or hard boiled egg may be added to their food. Care must be taken to supply a liberal amount of green food. At first when grass is not obtainable this can be done by finely cut cabbage, apples, turnips, beets, lettuce or anything of the kind; mixing this with the oatmeal and bran, etc., but adding no water the moisture from the green food being sufficient.

For the first three days we must see that the chicks learn to run under the hover for heat. Whenever a visit is paid to the brooder and chicks are found outside the hover it is well to force them under the flame. By the third day they will learn to find the heat whenever they need it. As their appetites increase with their growth, increase slowly the quantity fed; but still always feed sparingly, and never more than they will eat up clean at one time. The only time you can be liberal is at night. For the evening meal coarse oatmeal, millet or cracked wheat may be fed, and if any is left over it will be readily eaten up in the morning for breakfast. The life in the brooder with artificial heat should extend for about six weeks, the temperature being gradually reduced until the chicks can be left without any heat whatever. A little whole wheat can be fed at the end of the first week, and will soon become a staple article in the way of grain. Always keep plenty of fine oyster shell, grit, coal cinders, charcoal, and clean water accessible. If the eggs are hatched before the frost is out of the ground it will be necessary to place the brooders in sheds or brooder houses built for the purpose.

When placing the brooders outdors they should be located in the orchard, under or near the shade of other trees, or in a field where you propose cultivating corn or root crops, or near a raspberry patch, or in fact anything that will afford shade for the chicks during the intense heat of summer. By using wire netting (1 inch mesh) two feet by two feet six inches high, make an enclosure about fifteen feet in diameter around the brooder. Support the wire by driving stakes, using ordinary builders' lathes, on the inside of the netting, turning the edge of the lath towards the netting. The two ends of the wire netting behind and by two pieces of lath on opposite sides nailed with wire nails and clinched. This keeps the ends straight and makes it more easy to handle the wire without damage when moving it from place to place. This wire netting will keep the chicks under control long enough for them to become located in their own brooder, and can be removed when the chicks are about three weeks old. But if the weather is unsettled and stormy keep the wire netting up longer in order to have the chicks more under control to drive into the brooder or brooder shed when any storm comes on. When the wire netting is removed the chicks will take care of themselves and will find their way back to the brooders for the night.

Brooders should be placed more than 100 feet apart, so that the different batches may not become confused. When the chicks are six weeks old remove the brooder and in its position place an "A" coop three feet wide by two feet six inches deep with no floor. This will house the chickens for another six weeks, and by simply moving it in a direction each day it is kept on perfectly clean ground. The front may at first be closed with a board and afterwards more ventilation given by leaving the slats open bit by bit.

When the chickens are twelve weeks old remove the "A" coop and in its last position place what we may call a "B" coop, with two perches on the following plan: Make 6 feet long by 2 feet 10 inches wide, with slanting roof. It should have two perches, running lengthwise of the coop, and a slat door to be shut at night. This, like the "A" coop, has no floor, and by moving it from day to day it is kept standing on clean ground, and in this coop the chickens may remain until the fall, when they should be moved into their winter quarters.

Having placed 40 or fifty chicks in the brooder, this number, after allowing for reasonable mortality and culling of cockerels for killing, will leave about 25 birds to each coop at four months old, and is a sufficient number for the coop to accommodate for the rest of the season. From the time the chicks are given their freedom from the brooder and the wire netting is removed, allow them perfect freedom to roam at will. These brooders may be placed in different parts of the orchard, in lanes, in spare pasture lands, in fact anywhere as long as they cannot be damaged by cattle, etc. The little chicks running amongst your crops will not do appreciable harm, in fact what little harm they may do will be more than overcome by the good in killing insects and grubs upon the cabbage roots. Tomatoes and melons and such fruit may of course suffer by the chickens breaking the fruit when it is ripe.

During all this period of growth do not attempt at any time to force the chicks too quickly by overfeeding or giving any quantity of meat. Slow and sure is the rule upon which to produce a laying hen. By the first of September we should have the winter quarters ready to receive the pullets. Then comes the important step of selecting the stock for the winter layers. Remember in the first instance you can pretty well count on 50 per cent of your flock being males. Again, allow yourself enough margin in the hen house soon after the 1st of September to cull freely. To be able to put aside 50 per cent of the females is not a bit too much. You have then left in your flock a selected lot of vigorous pullets, and in all respects thoroughly healthy birds. Place these in the hen house soon after the 1st of September, is ample time to get accustomed to their new quarters before they settle down to lay.—L. H. Baldwin of Deer Park, Ont., in Farming World.

PRINCIPLES OF SURFACE TILLAGE.

It is fortunate that the early tillage which is needed to save moisture, warm and dry soil, and develop plant food also tends to cause an earlier germination of weed seeds, thus making it possible to kill one or more crops of weeds before the field is planted. The first stirring of the soil often so much warms it that weed seeds near the surface quickly sprout so that in fitting ground, even for oats, time enough elapses before the oats ar sowed to let the weeds get a sufficient start so that the stirring of the soil with the drill or seeder kills many and this is especially true if the field is gone over with a light harrow 24 to 36 hours after seeding. To a careless observer this statement may appear untrue, owing to the fact that the weeds are not yet up so as to show; but if the seeds have sprouted they kill very easily by the drying of the soil, because they have no root surface to adhere to the soil and keep them alive when exposed to the drying wind and sun.

It should be kept in mind that a heavy growth of weeds on a soil before the crop is planted tends to reduce the immediately available fertility by taking up the soluble salts, by drying out the field and by reducing the rate at which plant food in the form of nitrates is developed. It is of course true that when the weeds decay, the plant food may be returned,but the danger is that they will not decay quickly enough to become available as soon as needed by the crop, especially if the crop is planted late and the growth of weeds has been heavy.

Weed seeds do not all germinate at once, and while the stirring of the soil kills some of them it places, others under suitable conditions to germinate. On this account harrowing a piece of corn or potatoes just after planting and again after they are up is the best and cheapest means of insuring perfectly clean rows. The broad light, tilting, spike-tooth harrow is the best tool for this work and when rightly used is very efficient. The teeth should be fairly close together, so that all the soil is stirred, but only a slight depth after the corn is up; otherwise the corn plants will be torn out. After the corn is up, the best time to harrow is just after dinner, when the soil is warm and evaporation is rapid. Under these conditions the plants are more flexible and do not break off as they may in the colder part of the day.

It sometimes happens that a heavy rain follows planting so closely that the first harrowing must be delayed long enough for the soil to dry out. Cases like this require the closest watchfulness and the harrow should start at the earliest possible moment. If this is not done the soil will draw together about the plants so closely that if it is stirred about them it will often adhere so firmly as to break them off. There is always a stage after a rain when the soil will easily work up fine and the season is apt to wait too long. Those who have not made it a careful study will be surprised to see how soon after a rain a light harrow may be used shallow without injuring the soil, and how much more efficient it is then than when used later on a soil which tends to become hard and stiff after rains.

INTERTILLAGE.

After the harrowing stage has been passed, a more positive tool is needed, which can stir the soil thoroughly to a greater depth. The best tool for intertillage has a sufficient number of teeth 1½ to 2 inches wide to thoroughly stir the soil to a depth of about three inches. The commonest mistake made in cultivating corn is in not working close enough to the row the first time through the field. There should be so much freedom of motion in the gangs of teeth that with a slight effort they may be brought together or separated very quickly, as of the two-horse cultivator should be held so closely together that without throwing much earth the surface in the row is completely covered. The teeth should be set so as to run a little deeper in the centre of the row where the roots are farther below the surface and where the mulch needs to be deeper on account of the greater evaporation there. As the corn becomes older the depth of cultivation should be decreased slightly and the distance from the row made a little greater in order to avoid root pruning.

In cultivation where broad shovels are used for general work, several bad effects result. In the central place, in order to effectually stir the soil the shovels must be set so that the points run too deeply into the ground and the dirt is thrown so far that it is impossible to work close enough to the row. In the second place the surface is left so much cloddy and the soil developed is less effective as such and more of the soil is thrown out of use in the ridges where it becomes too dry to allow nitrates to form well in it. Besides this when rains follow the cultivation, a large per cent of water is absorbed by the ridges which lose it quickly by evaporation and thus it contributes