

wanting, and nothing more conclusive is required to prove the fallacy of opposing to heavy ordnance a rigidly unyielding iron wall.

#### THE PACIFIC MILLS MANUFACTURING ESTABLISHMENT AT LAWRENCE, MASS.

In connection with the French Exhibition of 1867, the Emperor Napoleon proposed ten awards of 10,000 francs each (nearly \$2,000 in gold) to ten different individuals or associations, who, in a series of years, had succeeded in securing a state of harmony between employers and their workpeople, and most successfully advanced the material, intellectual, and moral welfare of the employes. In response to this appeal, the "Pacific Mills," at Lawrence, Mass., devoted to the manufacture of ladies' cotton and wool dress goods, prepared and forwarded to the jury a statement concerning the operations of their establishment. The jury awarded the third place on the list to the Pacific Mills, together with a prize and a gold medal.

We have before us the printed statement, which embodies many very interesting facts about the organization and management of this model establishment, some extracts from which will interest our readers.

#### THE ORGANIZATION.

The management is confided by about one hundred and fifty stockholders, to nine directors, chosen annually.

The original number of shares of the company was one thousand, costing \$1,000 each, making a total capital of \$1,000,000. The cost of the buildings and machinery having exceeded this sum, fifteen hundred shares more, at same cost, were issued, making the total number of shares to be twenty-five hundred, and the cost of the capital stock \$2,500,000.

They commenced operations near the close of the year 1853, but no goods were ready for market until the spring of 1854. The amount of machinery then consisted of one thousand looms, with carding, spinning, and dressing machinery sufficient to supply them, together with combing machines and spinning for worsted yarn, used in the manufacture of mixed fabrics, and was equal to the production of about two hundred thousand yards weekly, of calicoes and mousseline delaines, with ten printing machines for preparing these goods for the market.

The buildings and machinery have since been increased, so that there are now in operation about one hundred thousand spindles for spinning cotton, with cleaning, picking, and carding machines to supply them, and about sixteen thousand spindles for worsted, with all the necessary preparing machines to occupy thirty-five hundred looms for weaving the two classes of goods above-named, and others, together with twenty-two printing machines, producing a weekly average of about seven hundred thousand yards. The machinery is propelled by eight turbine wheels, six of them being seventy-two inches in diameter, with a fall of water equal to twenty-six feet, yielding fifteen hundred horse-power.

The average sale of the manufactured goods of the company, for a few years past, has exceeded \$7,500,000.

About thirty-six hundred work-people are now employed by the company; of these there are sixteen hundred and eighty men, fifteen hundred and ten women, eighty boys between ten and twelve years, one hundred and forty boys from twelve to eighteen years, forty girls from ten to twelve years, and one hundred and fifty girls from twelve to eighteen years.

In the origin of the establishment the principle was adopted by the managers that there was to be a mutual dependence between employers and employed, each having rights which the other should respect, and that inasmuch as the success of the proprietors must depend much upon the cheerful and intelligent co-operation of the work-people, certain plans were adopted to secure "the material, moral, and intellectual welfare of the workmen," both as a duty to them, and one of self-interest to the proprietor.

#### MATERIAL.

For the material well-being of the laborers, special care was used in the original construction of the work-rooms, to make them cheerful, comfortable, and well-ventilated, so as to avoid as far as possible, the unpleasant drudgery of work, and to secure order and neatness throughout.

Houses were constructed for dwellings, which should give to families residences at moderate cost of rent, that would secure the health and comfort of the work-people, while they were cheerful and attractive. Men pay for these houses a weekly rent about equal to one-eighth of their wages. Large buildings were erected for the use of single females whose residences were at a distance, and divided into seventeen large apartments, capable of accommodating eight hundred and twenty-five persons in the aggregate. The rooms are arranged for two persons each; well ventilated and lighted, and comfortably furnished. Unmarried men are never allowed to lodge in these houses, nor in any case a married man, excepting he is accompanied by his wife, and even then but rarely. Females pay about one-third of their average wages for rooms in these boarding-houses, including food, lights and washing. Fuel for fires in the rooms is an extra expense.

It is common to provide coal, and sometimes flour, for the work-people, at the cost price of large quantities.

Another effort for the material welfare of the operatives was adopted in the earliest history of the enterprise, and has been continued for nearly thirteen years, with marked success, doing much to promote "harmony among all those co-operating," and to establish a bond of sympathy and union.

An association was formed, called "Pacific Mills Relief Society," of which each person employed by the company must be a member, the entire management thereof being in the

hands of the work people, each officer being chosen by themselves from their own number, excepting the president, which office has always been filled by the resident agent or manager, who seldom acts, however, excepting as counsellor or umpire.

Each person, on commencing service, elects whether he will pay two, four, or six cents per week to the relief fund—the lower sum being a little more than one-hundredth part of the weekly averages of those who are the youngest, and consequently least paid, and the highest sum, six cents weekly, bearing the same proportion to the average weekly wages of the entire body of work-people. When the sum in the hands of the treasurer of the society, who is always the confidential clerk of the company, and keeps the deposit with the company for protection, has reached the sum of \$1,000, the weekly subscription of all persons who have been employed by the company three months ceases, while it continues with the new comers.

This condition of funds occurs so often that for nearly one-half the time the older employes are not assessed, and the real sum withdrawn from their wages annually is a very small proportion of their wages, and is far from being a burden to the poorest.

When a person has been in the employment of the company three months, and consequently for that time paid his elected sum to the funds of the relief society, he becomes a full member of that society, and entitled to certain privileges. If sickness occurs, preventing him from labor, and he sends notice to the overseer or head workman of his room, one of the appointed stewards is sent to learn the nature of the illness, and the sick one becomes the special charge of this steward, who for a man is one of his own sex, or if a female, a woman; and it is this steward's duty to see that a nurse and physician, are secured, if necessary, and to draw from the wardrobe of the society such changes of personal and bed linen as the circumstances demand.

Each sick person, if the illness continues one week, is thenceforward granted an allowance from the funds of the society. He who has paid two cents per week for at least three months, receives \$1 25 weekly for the period of twenty-six weeks, if sick so long. Double this sum is allowed if four cents have been paid; and \$3 75 when the amount paid has been six cents weekly. In cases of special need the officers of the society are authorized to make an extra allowance, though great care is used in such a dispensation. Those who die poor have their funeral expenses paid, and are respectfully buried in the beautiful lot in the city cemetery belonging to the society. In some cases the deceased has been sent to his native town, by the desire of his friends without cost to them if they were poor.

Sick members are often accompanied to their friends by a steward, or the overseer of their workroom, when too feeble to go alone, or the friends too poor to come for them. The blessings of this society are thus made known to parties at a distance, and it often induces persons of excellent character to seek employment of this company, while those who have secured the benefits of the relief society retain it in warm remembrance. More than one poor mother, whose only child, while a member of this society, has been disabled by sickness, has found the weekly allowance an invaluable aid to her slight income, and called loudly for blessings upon its officers and the institution engaged in such a work of merciful kindness. Many a father or mother, or other relative, whose child or friend has been sent to this company, have besought the blessings of heaven upon the members of this society who have cared for their absent ones in time of sickness, and soothed them as they have faded away from life.

Though there is not space for details of great interest, it must be seen that this plan has a direct tendency to promote sympathy for each other among the work-people, and to secure a bond of union. Most surely those who daily observe its workings see it.

It will also be noticed that a very important feature of this plan is that it is an association of the work-people themselves, wholly controlled by them, and consequently sure of permanency, while favored to its present extent by the employers. This is likely to continue, because they witness its important influences and usefulness.

The total amount of money expended for the benefit of sick members in twelve years of its existence, ending in April 1866, has been \$25,530 68 to eighteen hundred and sixty-eight persons, and the amount paid to the fund has exceeded this sum about \$1,200. The corporation contributes weekly to this fund, and also to meet individual cases which are especially aggravated.

#### MORAL.

To meet the protection of the large number of single females employed by the company, who, as is often the fact in the manufacturing establishments of the United States, and perhaps elsewhere, are away from the guardianship of their friends, the boarding-houses referred to above are controlled by persons carefully selected for their ability to influence this class of work-people, of established good character, who will take an interest to secure the comfort of their boarders, and save them from bad moral influences, acting really, as far as possible, in the place of guardians. If a young female is known to visit places of evening amusement of doubtful character, or gives any reason for suspicion that she is guilty of immorality, or even of careless unguarded conduct, she is admonished, and if reform is not immediate she is discharged from the house and from employment.

The doors of the house are locked at ten o'clock at night, and no one allowed to be out after that hour without a satisfactory excuse. Doubtless persons of immoral character secure employment by the company, and by superior secrecy retain their connection. Among so large a number some will be

impure, but it is believed that very few of these females are led astray while connected with the mill, if virtuous when commencing work. It is impossible for an openly vile person to retain connection with the company.

Men of intemperate habits, or of general bad character, are excluded from the company's service, though patience with them is encouraged, with the hope of securing reform, and this forbearance and attendant labor has often been rewarded. It is an established principle that all profanity or other bad language, any bad example, or even abuse of authority among the head workmen, must be strictly avoided, especially when these overseers have in their charge females or young persons. More than one such responsible workman has been removed for using improper words, or ill-treating subordinates. It is absolutely demanded of these persons that they treat those under them as they would desire to be treated themselves if in their position.

The directors have placed their associate, the manager at the works, to represent their feelings to the work-people; to show them sympathy in their trials; to counsel them in their need of advice, and to be their *Friend*.

Careful efforts have been made by him to secure their confidence, and he has cultivated the conviction that they could ever find in him a father, a brother, or friend. Many hearts have been moved to earnest gratitude for the aid which they have thus secured in their time of need. It requires a vast amount of patient listening to complaints; to tales of sorrow and want; but it has had its reward in seeing so many relieved and made glad and hopeful. The real moral effect and the real satisfaction in such a relation between employer and employed cannot be written. The spirit of the employer is imparted to the more responsible and influential workmen, and to those under them, while a healthy moral condition is secured.

#### INTELLECTUAL.

When the company was first established, the directors appropriated \$1,000 for the purchase of suitable books for a circulating library, and provided a suitable room for it on their premises. The work-people have always been required to pay one cent each week during their services, and they thus become members of the Pacific Mills Library Association, which is managed entirely by themselves, they choosing their own officers for the control of its affairs, and for the selection of books, but selecting one resident manager for the president and chairman of the library committee. This weekly payment secures the privilege of the use of the library and reading-rooms of the society. One room is appropriated to males, and is supplied with the local newspapers of the city, and of Boston and New York, together with numerous serials of a scientific and literary character, and is open from six o'clock A. M. till nine P. M., warmed and lighted. It is in close proximity to the other room containing the library, now exceeding four thousand volumes, and also a cheerful, airy, comfortable apartment for the females, which is carpeted, and made attractive by daily and weekly publications, specially adapted to their wants, and stereoscopes with numerous slides, all in charge of an intelligent and cultivated young lady. It is open from nine o'clock A. M. till nine o'clock P. M., and is much frequented and valued.

A large number of volumes of the library are in constant circulation, as the number of the work-people who cannot read or write does not exceed fifty in one thousand, and these are principally of foreign birth. All new publications adapted to this class of readers are bought as soon as published. The privilege of taking books from the library is extended to members of families whose head is a member of this association.

The funds of the society are also used to purchase tickets of admission to lectures, and suitable popular amusements, which are distributed among the members. This association, as well as the relief society, it will be seen, is supported and managed by the work-people themselves, who secure a valuable return for their small outlay, and also the permanency of its operations, avoiding the dependence for existence and usefulness upon the life or even connection of any one person of special prominence.

The law of the State forbids the employment of children under ten years of age, and requires that children employed between ten and twelve years of age shall be in school sixteen weeks of each year, and those between twelve and sixteen years, eleven weeks. The company contribute annually to the support of an evening-school for both sexes.

#### SUCCESS.

It has often been stated that care of employers for the education and welfare of their operatives, especially to the extent herein shown, is incompatible with pecuniary success. Facts prove that this is not true with the Pacific Mills, but others must determine how much of this is due to the principles of action established and maintained. It is also believed that the work-people have received great benefit. Some of the evidences of this are the following:

1. There have been no strikes among the work-people, which are their curse and the dread of employers. They have been encouraged to feel that any grievances will be patiently listened to, and frankly discussed, and the result has always been favorable to good order. By no means has every uneasy spirit been quieted, but the mass has been satisfied.

2. A higher class of workmen has been secured. Those best able to appreciate the privileges enjoyed in connection with this company have been drawn thither for employment. Specially is this true among the overseers who engage the laborers in their different departments, and give character to the mass. Their intelligence and hearty co-operation in the plans for the material, moral, and intellectual advancement of the operatives, mold the whole and secure a higher stand-

ard. The general influence of the principles adopted by the company leads these prominent workmen to feel that they are intrusted with a degree of guardianship of those under them, and this feeling is very manifest. Respect for the manhood of a workman molds him.

3. Many of the work-people have invested their funds in *savings banks*, and this is specially encouraged. Formerly the company received deposits from the work-people, allowing an annual interest of six per cent., but for some prudential reasons this plan was abandoned, and the depositors were encouraged to invest in chartered banks. The company held in their hands, at one time, more than \$100,000 of the savings of their work-people, which has been changed into other channels. There is no doubt that their deposits now exceed this sum largely.

4. Quite a number of the work-people own *houses* free of debt, while others have been partially assisted by the company, it receiving a portion of their wages each month in reduction of the debt. More than \$50,000 are thus invested.

5. Others invest their funds in the bonds of the United States Government in preference to savings banks.

6. Several of the workmen are owners of the *stock* of the company, and have the same rights in regard to the control of the officers and general management as other stockholders.

7. Investments of earnings in premiums on *life insurance* have been made by many of the workmen.

8. More than one of the workmen have been members of the City Government in its board of aldermen and common council, and not an annual election passes without the choice of one or more to some of these important offices.

The pecuniary success of the company has warranted a liberal spirit in the payment of wages to the work-people. The least sum now paid in weekly wages to the youngest employed is \$1 82 in gold, and the number belonging to this class is very small. Boys of sixteen years do not receive less than \$2 85 in gold weekly. The least amount paid weekly to men is \$6 75 in gold, while a very large majority receive much more. Females receive from \$2 48 in gold weekly to \$6 72, while a few earn more. This excepts young girls, whose wages are the least sum named above.

Spinners, weavers, and a few others, are paid in accordance with their products, some of them earning very large wages.

The stockholders, as previously stated, have invested \$2,500,000 in the company. During the past twelve years they have received in dividends more than \$3,000,000, and the fixed property has cost a much larger sum than the amount of the capital stock. The treasurer, furthermore, holds in his possession a very large amount of undivided earnings, with which to purchase cotton, wool, and other materials, for cash.

#### PROGRESS OF THE WORKING CLASSES.

We have received from Messrs. Geo. Routledge & Son, No. 416 Broome street, a volume of 300 pages, bearing the above suggestive title. The work embraces a great variety of topics, bearing upon the social condition of the overwrought working classes of Great Britain, and the moral and legal agencies employed toward their reformation during the past thirty-five years. The information and the statistics contained in this volume, are worthy to be studied by every manufacturer in our country who employs a considerable number of hands.

The cotton manufacturers of Manchester were a shrewd, sturdy, square-set, selfish body of men more conspicuous for their business management than for humanity in dealing with those whose labors were necessary to the success of their undertaking. It is not to be wondered, therefore, that the evils growing out of this state of things were of a dreadful character. The absence of education stunted the mind while increasing labor dwarfed and deformed the body, and the short hours of relaxation from toil allowed to the factory worker, were commonly spent in the most sensual and degrading pursuits until the evils were almost unbearable.

The testimony of an English philanthropist, given in 1832, says:

"The population employed in the cotton factories rises at five o'clock in the morning, works in the mills from six until eight, and returns home for half an hour or forty minutes to breakfast. This meal generally consists of tea or coffee, with a little bread. The tea is almost always of a bad, and sometimes of a deleterious quality. The operatives return to the mills and workshops until twelve o'clock, when an hour is allowed for dinner. Among those who obtain the lower rate of wages this meal generally consists of boiled potatoes. The mess of potatoes is put into one large dish, melted lard and butter are poured upon them, and a few pieces of fried fat bacon are sometimes mingled with them, and but seldom a little meat. Those who obtain better wages add a greater proportion of animal food to this meal, at least three times in the week; but the quantity consumed by the laboring population is not great. The family sits around the table, and each rapidly appropriates his portion on a plate, or they will plunge their spoons into the dish, and with an animal eagerness satisfy the cravings of their appetites."

After thus describing the half-savage domestic habits of the people, he goes on to describe their general surroundings: "The population nourished on this aliment is crowded into one dense mass in cottages separated by narrow, unpaved, and almost pestilential streets, in an atmosphere loaded with smoke, and the exhalations of a large manufacturing city. The operatives are congregated into mills and workshops during twelve hours in the day, in an enervating heated atmosphere, which is frequently loaded with dust or the filaments of cotton, or impure from constant respiration, or from other causes. They are drudges, who watch the movements

and assist the operations of a mighty material force, which toils with an energy ever unconscious of fatigue. The state of the streets powerfully affects the health of their inhabitants; sporadic cases of typhus chiefly appear in those which are narrow, ill-ventilated, unpaved, or which contain heaps of refuse or stagnant pools."

"What were the amusements of the masses, thus overworked, ill-fed, ill-housed,—left for the most part uneducated? Large numbers of working people attended fairs and wakes, at the latter of which jumping in sacks, climbing greased poles, grinning through horse collars for tobacco, hunting pigs with soaped tails, were the choicest diversions. An almost general unchastity—the proofs of which are as abundant as they would be painful to adduce—prevailed among the women employed in factories, and generally throughout the lowest ranks of the working population. But drink was the mainspring of enjoyment. When Saturday evening came, indulgences began which continued until Sunday evening. Fiddles were to be heard on all sides, and limp-looking men and pale-faced women thronged the public houses, and reeled and jiggered till they were turned, drunk and riotous, into the streets, at most unseasonable hours. On the Sunday morning the public houses were again thronged that the thirst following the indulgence of the night might be quenched. When church hour approached, however, the churchwardens, with long staves tipped with silver, sallied forth, and, when possible, seized all the drunken and unkempt upon whom they could lay their hands, and these, being carefully lodged in a pew provided for them, were left there to enjoy the sermon, while their captors usually adjourned to some tavern near at hand, for the purpose of rewarding themselves with a glass or two for the important services they had rendered to morality and religion. In fact, sullen, silent work alternated with noisy, drunken riot; and Easter and Whitsuntide debauches, with an occasional outbreak during some favorite 'wakes,' rounded the whole life of the factory worker."

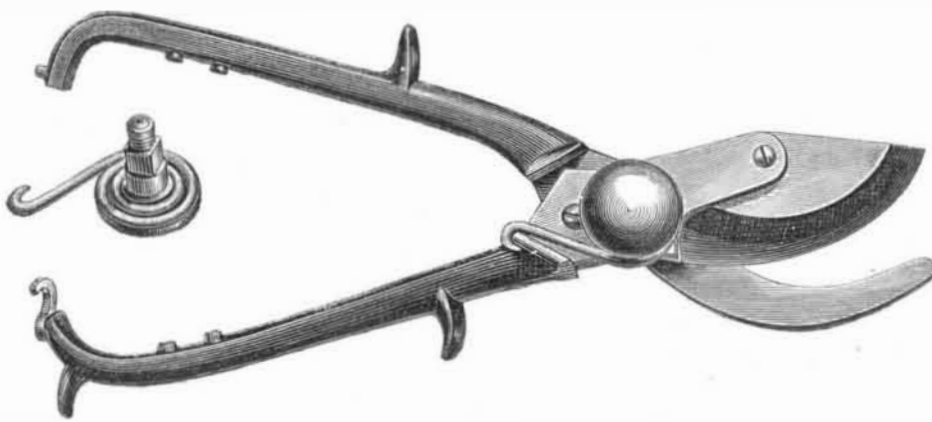
It appears from the volume before us that the first efforts towards the reformation of factory abuse began among the more thoughtful of the operatives who proposed the "Short Time Bill," the agitation of which brought about the organization of trade societies, in nearly all of which there was a tendency to violence. Riots were not uncommon, and the union men habitually refused to work with non-union men or "Knobsticks," as they were nick-named, and often maltreated and even murdered them.

The mercenary practices of employers had become so oppressive that human nature broke down under the severe burdens heaped upon the working classes and under the infliction of wrongs to which those in power seemed indifferent, it cannot be wondered at, though always to be regretted, that violent demonstrations were put forth. The volume briefly sketches the various agencies brought into existence to reform the abuses of the factory system, and now it appears that progress has been general and continuous, and that chiefly through influences which have proceeded from the class itself.

At the present moment in Europe, as well as our own country, the factory system is vastly improved and improving. The operatives are not degraded by ignorance and vice, and children are not allowed to enter factories and to be excluded from the privilege of schools and such outdoor exercises as tend to develop the mental and physical powers. We are happy to record the progress of the working classes.

#### Improved Spring and Bolt for Shears.

The object of this invention is to arrange a spring for opening the blades and jaws of scissors, shears, hand nippers,



BERGNER'S SPRING AND BOLT FOR SHEARS.

punches, etc., which shall be always effective and out of the way of the hand in using the implement. The engraving shows a pair of pruning shears with this improved spring. The details are shown plainly in the small figure.

The bolt which holds the two blades in connection, has a broad cap or head that conceals and retains in place a coiled spring, one end of which passes through a hole in the shank of the bolt under the head, and the other, formed into a hook, engages with a projection made on the handle of one of the blades. Soon as the pressure of the fingers is relaxed, the tension of the spring acts on the handle of the jaw and throws the blades apart. The rivet or bolt is secured by a nut on its end in the usual way, one blade fitting a squared place on the shank of the bolt and the other turning freely on the cylindrical portion.

The patent bears date of June 23, 1868, and all applications

for rights, etc., may be made to the patentee, Georg Bergner, or to L. Wattenberg, Washington, Mo.

#### Poisonous Champagne.

It is much to be doubted whether alcohol or any of the sparkling and seducing liquors which contain it are to be considered, even when pure, as anything but poisons. The following extract from the *Grocer* will show the character of the factitious substances which are vended in modern times, and may prove both interesting and instructive:

"There is nothing but roguery to be found in villainous man!" exclaimed Sir John Falstaff on detecting lime in his sack. Could the fat knight now revisit the earth, he would have to admit that the art of doctoring wines had been carried far beyond the stage reached when 'a cup of sack with lime in it' set him moralizing on human depravity. He would have an opportunity of trying 'something sparkling,' compared with which limed sack was a harmless mixture. We cannot blink the fact that much of the so-called 'champagne' which is ostentatiously set before heated guests at public and private assemblies is simply the product of fraudulent ingenuity—a detestable counterfeit which resembles the natural wine just as the Champagne Charley of the music halls resembles a finished gentleman. Its color and flavor are adventitious, its bouquet is artificial, and its

"Beaded bubbles, winking at the brim."

may be traced to the condenser of a modified soda water machine. Happily a disputed contract has led to an exposure which will probably check the further growth of the British champagne trade. From the recent case of Cox against Barnett we gather many interesting particulars respecting the fabrication of this aerated stuff. Our present object is to call special attention to the chemical facts elicited at the trial of this case, and to explain our reasons for believing that 'champagne' of British manufacture is generally contaminated with lead. The case was an action to recover damages from a machine maker for a breach of contract. With the laudable intention of carrying on business as a manufacturer of aerated wines, the plaintiff purchased from the defendant, at the cost of £135, a champagne machine, on the understanding that it was capable of producing a hundred quarts of champagne or aerated wine daily. The 'champagne,' in its 'still' condition, consisted of light white wine, fortified and flavored with a sirup technically termed 'trente-six,' and to convert it into sparkling wine it had to be impregnated with carbonic acid gas in the condenser of the machine. According to the plaintiff, the wine left the condenser turbid, and those who tasted it suffered severely from sore lips. Dr. Matthiessen, F. R. S., the eminent chemist of St. Mary's Hospital, submitted the product to analysis, and actually extracted from a single gallon no less than four grains of metallic lead, in quantity corresponding to about two thirds of a grain per bottle! With characteristic acuteness, he then performed a number of experiments to determine the action of lead and solder on samples of wine originally free from lead, and in every case he found the wine contaminated with the poisonous metal. We have had an opportunity of checking Dr. Matthiessen's results, and can vouch to their accuracy. The free acid of the wine attacks lead and solder with great rapidity, and, by suitable processes, the dissolved lead can be separated from the wine and weighed. An examination of the condenser in court brought to light the source of the lead, for almost the whole of the interior was found to be covered with solder. The principal witness for the defendant was a champagne manufacturer of twenty-five years' experience, not from the department of the Marne, but from an unrecognized wine district in the city of London. This gentleman swore that neither, tin, lead, nor solder would affect the wine; that the condenser exhibited was a first rate article; that he himself had for a long time manufactured 'champagne' with the aid of similar machines, and that one of his condensers contained a lump of solder as big as a hen's egg! He did not inform the court whether the unhappy consumers of his wine had escaped lead colic. The examination of this witness elicited the curious fact that he imported grapes from France to make champagne in London." French champagne made in England!

ALASKA.—Late advices from Alaska are very encouraging. Coal mines have been discovered near Sitka, on the mainland. The quality is considered unequalled, and the seam is over twenty feet wide and traceable for some distance. The coal was tried on the United States steamer *Sigisno* and pronounced excellent. It has the appearance of pure anthracite, and is superior to any Lehigh coal. In addition to this discovery, Alaska is likely to become a place of fashionable resort in hot weather.

WINE is becoming an important article of manufacture in Kansas. The Lawrence papers state that the wine producers are now actively employed in gathering an abundant crop of summer grapes.