

classes at least, they should enjoy a popularity they little dream of. (Loud and continued cheering.)

Mr. Macfie, M.P., touched upon the history of our patent laws, and the condition which always in the olden time attached to patents, that they should not make the article patented dearer to the public—a condition which had long been lost sight of. (A voice: "Patents make things cheaper.") Cheers.) Switzerland had no patent laws, and Germany and Holland had declared against them; it would therefore be impossible long to continue them in this country. He denied that the inventor had any exclusive right in his invention—"Oh, oh!"—but the inventor, whose invention was of national importance, ought to be paid out of the public funds, and he thought it possible to devise a scheme of rewards that should be satisfactory to all parties. (Laughter.)

Mr. J. B. Galloway, of Newcastle-on-Tyne, was requested by the secretary to move the first resolution. As put into his hands this resolution was to the effect that the patent laws were "a hindrance to genius, science, and progress, and the progress of the whole civilized world, in however simple a form they may appear;" but he said that after the speeches he had heard he could not agree with this, and he would substitute the following: "That the meeting having heard the statements for and against protection for inventions by the existing patent laws, is of opinion that protection is absolutely necessary as a right, by which inventors may be secured a true legitimate right in their inventions," and to this he would add the second part of the resolution handed to him, resolving to assist in the formation of the proposed Co-operative National Mechanical Inventors and Designers' Progressive Institution, to forward genius, etc., and to obtain for the poor inventors of England the reward for their inventions.

This was seconded by Mr. G. F. Savage, who, in a powerful, close-reasoned speech, demolished the arguments advanced by Mr. Macfie. He mentioned several cases in which patents granted in this country had been refused in foreign countries, the result of which was that in those countries where no patent had been granted no manufacturer had thought it worth his while to make the articles. (Hear, hear.) Dr. Normandy, the inventor of the well-known apparatus now in general use for converting salt water into aerated fresh water, patented his invention in this country, and then applied for a patent in Prussia, but the Prussian Government, in their usual style, refused to grant him a patent, and the result was that when the Prussian Government needed a supply of the machines, they found there was no one in that country who had engaged in their manufacture, and consequently that Government had to send to this country to obtain them from the patentee. He also stated that where no patent laws existed inventors invariably left the country and took their inventions to the best market. This was the case with Mr. C. W. Siemens, F.R.S., a native of Prussia, who left that country and came to reside in England, because practically no encouragement was accorded to inventors in Prussia. Mr. Siemens' regenerative furnaces and improvements in telegraphy had augmented our national wealth to the extent of several millions of pounds sterling, all of which was lost to Prussia through having practically no patent laws. As regarded Switzerland, about which so much had been said by Mr. Macfie, he was not aware that the Swiss people had invented anything better than the alpenstock. (Laughter.) He believed there were no inventors in Switzerland, and he was sure that none of our manufacturers had occasion to fear competition from that quarter. It was notorious that Mr. Nasmyth, working under a patent, had supplied steam hammers cheaper and better than any manufacturer in the world, and it could be proved from numerous facts that instruments and machines constructed by persons not employed under a patent, were less cheap and less perfect than those that were. (Loud cheers.)

The resolution having been put from the chair, was carried by an immense majority, amid loud cheers, only two hands—those of Mr. Macfie, M.P., and Mr. Clarke—being held up against it.

The following resolution was then proposed by Mr. Dunlop, seconded by Mr. Paterson, and carried by the same majority, amid tremendous cheering: "That an amended patent law which would give efficient protection to inventors at a low cost would be of the greatest value to this country, and enable it to maintain its supremacy in the arts."

Previously to the passing of the second resolution, Mr. Macfie made an excited but unsuccessful appeal for an adjournment of the meeting, and assured the audience that he was most anxious to promote the interests of workingmen by his action in the matter. (This statement was received with shouts of derisive laughter from all parts of the room.)

LABOR IN CALIFORNIA.

We published last year a statement, copied from California papers, to the effect that more labor was needed there in nearly all departments of industry. This statement was denied by a correspondent, who stated that the report was circulated by those interested in cheapening labor, to the detriment of mechanics in that State, who, it was asserted, were even then more numerous than jobs.

The *Alta California* now states that the State is suffering great injury by the exceptionally high wages which prevail. With the exhaustion of the placers, the immediate cause of very high wages ceased. The value of town property in the mining districts has declined, and the range of employment has consequently been narrowed. Combinations, however, have succeeded in forcing the pay for certain forms of labor up to a mark that bears no just proportion to its actual value or the rate at which other labor is compensated. The ine-

qualities in this respect are pronounced by the San Francisco journalist "gross and unreasonable." The circumstance is rendered more noticeable by the fact that in the colony of Victoria, which now yields more gold than California the wages of mechanics and unskilled laborers are not half so high as those which prevail in the latter State.

Alloys Fusible at Low Temperatures.

We have known for some time past, several alloys fusible at temperatures below the boiling point of water. The one commonly known by the name of Newton alloy consists of eight parts of bismuth, five parts of lead, and three of tin. It fuses, according to Pelouze, at 94.5°, and according to Thenard at 90°. The one by D'Arcet, the most celebrated of all, is made of two parts of bismuth, with one part of lead, and one part of tin; it melts at 93°.

In a treatise on chemistry by Pelouze and Fremy, we are informed of another, composed of 5 parts of bismuth, three parts of lead, and two of tin, the fusing point of which comes as low as 91.6°.

Dr. Wood says that there exists another more recent than the latter, which was described in *Silliman's American Journal* as containing from seven to eight parts of bismuth, four parts of lead, and two of tin, to which two parts of cadmium are added. It is said to fuse between 66° and 71°. While engaged in galvanoplastic experiments, M. Lalancé used seven to five parts of bismuth to one to five parts of cadmium. The alloy which he thus obtained, fused at the low temperature of 66°. The most surprising feature in this discovery is that its difference from the other alloys consists in the addition of a metal of more difficult fusibility than any of those contained in the ordinary alloy. The cadmium by itself only melts at a temperature of 360° C. The other components, lead, bismuth, and tin, fuse at 312°, 276°, and 230° respectively. Another point worthy of note in the preparation of alloys is the peculiar use made of bismuth. From the undermentioned table it will be at once apparent that the alloys at present in use consist to the extent of exactly one half of their weight of bismuth:

Metals.	Alloy of Newton.	Alloy of D'Arcet.	Alloy of Pelouze.	Alloy of Wood.
Bismuth.....	600	600	600	600
Lead.....	375	300	360	320
Tin.....	225	300	240	160
Cadmium.....	—	—	—	120
	1,200	1,200	1,200	1,200

The next discovery in this field ought to be an alloy fusible at the ordinary temperature.

The heat of summer is stored up in the ocean, and slowly given out during the winter. Hence one cause of the absence of extremes in an island climate.

MANUFACTURING, MINING, AND RAILROAD ITEMS.

The French Government has authorized the French Cable Company to lay a cable from Brest to England.

The soft rock of the Hoosac tunnel has been passed and solid rock struck again so that the contractors will not have so much to do with brick arching as they expected.

The Board of Health of this city has urged upon the Fire Commissioners the appointment of an inspector of kerosene and other burning fluids. The Fire Commissioners referred the request to a committee, and suggested instead, that some instrument capable of testing oil by the general public should be introduced.

The St. Louis County Court has decided to cease further operations in boring the artesian well, already the deepest in the world. The depth reached was 3,843½ feet, and the water obtained there was very salt. Some members of the court wished to continue the work until the well was 4,000 feet deep, but a majority decided against this on account of the expense; the latest work in boring being nearly forty dollars a day, and the progress made at that time about five inches. The well is to be plugged up at a depth of about 1,200 feet, where pure water can be obtained by pumping.

More than one thousand men are at work on the air line railroad between Middletown and New Haven. A few piles have been driven for the bridge across the Connecticut at the former place, simply to ascertain the nature of the river's bed.

Temperance principles and habits of cleanliness are not likely under present arrangements to make much headway in the City of Brotherly Love. Philadelphia is outgrowing its water supply. What with the low ebb to which the water of the Schuylkill River has fallen, the defective means of utilizing the available supply, and the late deplored contamination of whiskey, lager beer must be at a premium. It is not often that we are able to give an instance in which our sanitary arrangements can compare favorably with those of Philadelphia; but in this case we are able to point with satisfaction to our abundance of water, and we suggest that our neighbors might do worse than imitate our example in the enterprise shown in the works by which we obtain our Croton supply.

Trade has lately received some impetus here on account of the low rate at which freight could be conveyed to the West over our principal railroads. Goods for Chicago which a short time ago were charged at \$1.88 per hundred pounds for first class, \$1.60 for second, and \$1.27 for third, paid only 25 cents per hundred, while the fourth class, heretofore 82 cents, fell to 18 cents. A nearly equivalent reduction was made in the rates to other places. The cause of this is stated to be a supposed violation of an agreement previously made by the great lines engaged in Western transportation, for a fixed rate applicable to all, except by the "all water" route, which, being slow, was 45 cents per hundred against \$1.88 by the railroad lines. The difficulty will, it is supposed, be adjusted shortly and the old tariff will again be in force.

The weekly production of cotton at Lowell has amounted to 2,394,000 yards, and the number of spindles in the woolen and cotton manufactories is 457,512.

The great ship canal which is to connect Amsterdam with the North Sea, is now once more in progress, the Government of the Netherlands having relieved the contractors of certain difficulties which for a time hindered the work. The canal will be about fifteen miles in length. The Zuyder Zee is to be shut out from Amsterdam, and the Pampus dam by which this is to be effected is already half finished, and the locks and sluices connected with it are in progress. By this undertaking Holland will add one more to her grand engineering works, but it appears to be an English firm that holds the contract.

What California will one day be, with its healthful climate and fruitful soil, may be inferred from the present enterprise of her population. Already her manufactures are estimated at thirty millions of dollars per annum, and they comprise woolen and cotton factories, iron mills, tanneries,

boiler works, brass founderies, saw mills, powder mills, paper mills, and almost every kind of manufacturing operations which can be found in our oldest states.

The Japanese colonists in California, have purchased another tract of land in Placer County for a tea and mulberry plantation. Herr Schell will return to Japan for the purpose of bringing a large addition to the colonists, and a fresh stock of mulberry plants.

Therecent hot weather in Europe, it is said, has destroyed the oyster beds on the coast of France, and the oyster harvest of the present year will be a total failure.

About 45,000 tons of ice are annually imported into Great Britain from Norway.

A mixture called "Hallogenin," which is intended to prevent the formation of incrustation in steam boilers, is sold extensively in Germany, and is said to answer the purpose very well. It consists of 65 per cent of sal ammoniac, 17 per cent of chloride of barium, and 18 per cent of catechu.

The *Chicago Railway Review* says the earnings of the Central Pacific Railroad for July were \$579,000, an increase of \$25,000 over the month of June. Notwithstanding the successive reductions of rates, the result of operations of the first three months since the connection of the eastern lines show a revenue at the rate of \$7,000,000 per annum, of which \$3,000,000 is net.

The Grand River nurseries, located five miles southeast of Lowell, Michigan, occupy 101¼ acres, having 600,000 apple trees, 200,000 peach, 50,000 cherry, 40,000 plum, 30,000 pear, 20,000 quince, and 60,000 miscellaneous trees and shrubs. There is also a vineyard with over 1,000 bearing vines.

The express car of Wells, Fargo, and Company, passing Elko, Nevada, on the 23d of July, had in it two tons of bullion for New York.

Business and Personal.

The Charge for Insertion under this head is One Dollar a Line. If the Notices exceed Four Lines, One Dollar and a Half per line will be charged.

Send for Agents' Circular—Hinkley Knitting Machine Co., 176 Broadway.

Adding Machines, simple & thorough, Macdonald, 37 Park Row.

\$1000 a month made by parties in Chicago manufacturing Russell's chilled iron sleigh shoes. Eastern States for sale. W. S. Garrison No. 4, Arcade Court, Chicago, Ill.

Unusual opportunity—Advertisement signed Postoffice Box 998, Minneapolis, Minn.

Manufacturers can now obtain a fine business stand, at very low price, by applying to F. H. Hoyt, Darien Depot, Conn.

Wanted—A partner to patent five good improvements. For further particulars address Postoffice box 124 Brazil, Ind.

To Foundrymen.—For Sale—The right to manufacture, in the Eastern States, "Russell's Chilled Iron Sleigh Shoes," with Overman's Pat. fastenings. Universally approved. As good as steel, and cheaper than common iron. Profits immense. W. S. Garrison, No. 4 Arcade Court, Chicago, Ill.

Machinist—J. P. Byrne, of Groveport, Franklin Co., Ohio, writes that he is 16 years of age, and desires to learn the trade of a machinist.

Chicago Railway Review.—Says the Davenport Daily Journal: "Every number fills a place as the organ of railway interests, in which it has, in the West, no rival." Price \$2 per year. Advertisements received.

Wanted—Any material more powerful than powder for blasting rock. Address Humbird & Hitchcock, Southampton Mills, Somerset Co., Pa.

Peck's patent drop press. Milo Peck & Co., New Haven, Ct.

The Best and Cheapest Boiler-flue Cleaner is Morse's. Send to A. H. & M. Morse, Franklin, Mass., for circular. Agents wanted.

Inventors and Manufacturers of small patent articles will consult their interests by addressing R. Tilden, 63 Cornhill, Boston, Mass.

If you have a Patent to sell, or desire any article manufactured or introduced, address National Patent Exchange, Buffalo, N. Y.

E. Kelly, New Brunswick, N. J., manufactures all kinds of machinery used in working Rubber.

The Family Steelyard—A new thing, weighs correctly from a balance and ounce notches throughout. Send for circular. H. Maranville, Akron, Ohio.

Wanted—A competent Sewing Machinist, to take charge of repairing. Address "F," Baltimore, Md.

J. T. Plass' patent safety band saw, is the most perfect saw made. Gives universal satisfaction. Manufactured only at his works, 204 East 29th st., New York. Send for descriptive circular.

Materials for all Mechanics and Manufacturers, mineral substances, drugs, chemicals, acids, ores, etc., for sale by L. & J. W. Feucht-wanger, Chemists, Drug, and Mineral Importers, 55 Cedar st., New York. Postoffice Box 3616. Analyses made at short notice.

Ulster Bar Iron, all sizes, rounds, squares, flats, ovals, and half-ovals, for machinery and manufacturing purposes, in lots to suit purchasers. Exleston Brothers & Co., 166 South st., New York.

Wanted—A second-hand "Index Milling Machine." Send price, etc., etc., to W. F. Parker, Meriden, Conn.

Grindstones are kept true and sharp by using Geo. C. Howard's Patent Hacker. Send for circular 17 S. 18th st., Philadelphia.

Cochrane's low water steam port—The best safeguard against explosions and burning. Manufactured by J. C. Cochrane, Rochester, N. Y.

Send for a circular on the uses of Soluble Glass, or Silicates of Soda and Potash. Manufactured by L. & J. W. Feucht-wanger, Chemists and Drug Importers, 55 Cedar st., New York.

Mill-stone dressing diamond machine, simple, effective, durable. Also, Glazier's diamonds. John Dickinson, 64 Nassau st., New York.

Leschot's Patent Diamond-pointed Steam Drills save, on the average, fifty per cent or the cost of rock drilling. Manufactured only by Severance & Holt, 16 Wall st., New York.

Tempered steel spiral springs made to order. John Chatillon, 91 and 93 Cliff st., New York.

For solid wrought-iron beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa., for lithograph, etc.

Machinists, boiler makers, tanners, and workers of sheet metals read advertisement of Parker's Power Presses.

Diamond carbon, formed into wedge or other shapes for pointing and edging tools or cutters for drilling and working stone, etc. Send stamp for circular. John Dickinson, 64 Nassau st., New York.

For Sale Cheap—A new combined hand and power cloth-balling press, all complete. S. J. Dederick, 35 and 37 Park Place, N. Y.

For Sale—A 20-H. P. link-motion propeller engine, suitable for stationary, good order. Hosford & Garsides, 211 Greene st., Jersey City

The "Compound" Wrought-Iron Grate Bar is the best and cheapest. Send for circular. Handel, Moore & Co., 121 Pine street. Postoffice Box 5,669.