

MECHANICAL EXHIBITION AT BOSTON.

One of the good features observable at this exposition of the industrial arts is that nearly all the machines in the machinery department are in motion. This allows the specific work accomplished by each, the *modus operandi*, to be readily ascertained and understood. Among these machines are several that have been already fully described in this journal, as the Buckeye Steam Engine, the Brown Caloric Engine, Worthington's Duplex Engine Pumps, Brainerd's Milling Machines, the Allen Steam Engine Governor, the Chase Steam Engine Governor, etc.; but there are others in operation having improvements that are ingenious and valuable. We refer more particularly to Kidder's Printing Presses, Dooley's Paper Cutter, the Morse Diamond Cutting Machine, Leather Splitting Machine, L. J. Wing's Improved Rotary Engine, Wiswall's Torrent Rotary Pumps, and many wood-working machines.

There is an unusually fine exhibit of steam, water, and gas valves by the Chapman Valve Co., of Boston. The Chapman valves have come prominently before the public during the past five years. They possess features which are of special interest to all persons using valves, and particularly to those who have found difficulty in procuring a valve that would remain tight under the various conditions to which valves are subjected. This company claim to produce a valve that will remain tight permanently when used for hot or cold water, gas or steam, and substantiate their claim by giving a guarantee with every valve. These valves are made with a hollow plug, and have a seat of Babbitt or soft metal instead of hard metal. The seat is cast into dovetail recesses in the body of the valve around the inlet and outlet openings after the plug is placed in position, and forms a perfect seat without grinding. The process of forming the seat is very ingenious, and originated with the manufacturers. These valves are, we are informed, proved at 300 pounds pressure per square inch. In the case of steam valves, with which there is so much trouble, this company guarantee that every valve obtained from them shall remain tight for the space of one year under 150 pounds steam pressure. The workmanship and finish of these valves is very superior. The hydrant by the same company is known as a gate hydrant, and the claim made for the valves extends with equal force to it.

The Boston Blower Co. exhibit a "Lightning Grinder," which was patented November 24, 1874, and improved 1878. This machine is for the purpose of grinding mower and reaper knives. It will grind a uniform bevel from the points to the very base of the sections. It will grind out notches and uneven places. It can be operated by one person. By taking off the knife holder, which is held by two screws, attaching a standard and platform rest, and putting on a larger wheel, the machine becomes an emery wheel grinder, which will sharpen, point or polish plows, cultivator teeth, shovels, mill picks, axes, and all tools used on a farm or in a shop. It is excellent as a cross-cut saw gummer. The emery wheels make 2,000 revolutions per minute. The same company exhibit, on the interchangeable plan, fan blowers, some of which are in operation, for cupola furnaces and forges, puddling and heating furnaces, steam boilers, etc., and also some exhaust fans for removing shavings from wood working machinery and dust from sand and emery wheels. The exhaust fans can also be used for ventilation, refrigerating, etc.

Hill, Clarke & Co., of Boston, have a fine exhibit of machinery, consisting of Flather's Hollow Spindle Engine Lathe, with turret head in place of tail stock and other tools. Their "Concord Buzz Planer" is a very meritorious machine. The shape of the frame is such that any irregularity in the floor will not cause a twist or spring, thereby cramping the tables or throwing them out of line. The tables are both movable and quickly adjusted by the use of one hand-wheel at each end of the machine; and while being raised or lowered the edge of the table will keep at equal distance from the cutting edge of the cylinder, thus giving the smallest possible amount of opening from the cutters when gauged for work. Their patent adjustable rest or guide is also attached to the machine, and by simply turning one screw it can be set for any bevel, or if desired it can easily be removed from the tables. On the front edge of the back table there is a rabbeting groove by the use of which, in connection with the rest, rabbeting can be done any depth from 1-16th to 1/2 inch, and any width desired.

A new device which remedies a great railroad nuisance is the noiseless locomotive safety valve invented by Mr. Henry G. Ashton, of the Ashton Valve Company, of Boston. The object of the invention is to overcome the nuisance of the sudden bursting out of steam when a locomotive is moving or standing still. The high pressure of steam in a locomotive boiler finds vent at the inconceivable velocity of 1,600 feet per second through the safety valve. The steam strikes the air with this force, and the problem has been how to avoid a noise proportionate to that force. This noiseless safety valve operates so that no steam is either seen or heard, by simply conducting the escaping steam through a pipe into the tender of the locomotive, where it is used to heat the feed water, which is then pumped warm, instead of cold, into the boiler. Thus all the steam that was blown into the air (with a noise) and wasted is utilized silently, and the public now has, or may have, in respect to a safety valve, a noiseless locomotive.

There is a series of inventions connected with these noiseless safety valves covered by eight patents owned by the Ashton Valve Company, who are applying their valves quite extensively on locomotives of different railroads.

Among the smaller machines at the Exhibition is an ingenious type writer exhibited by Fairbanks, Brown & Co., of New York and Boston. It is intended for use by reporters, editors, authors, copyists, merchants, and professional men. Writing with this machine is done by means of keys, which are compactly arranged in four rows of eleven each, and may be operated by any finger of either hand. On each key is plainly printed the letter or character it represents. By depressing any key, the corresponding letter is printed on the paper. The "action" is fully as rapid and easy as that of the piano. The alphabet, numerals, and all necessary characters for punctuation, italicizing, and reference, are made by it. It is easily adjustable to any desired spacing between lines. The improvements in this little useful machine are numerous, and its construction is different from all other machines of this class. The advantages claimed for it are beautiful legibility, rapidity of action, and ease of operation. The average speed of a pen in ordinary writing is from twelve to twenty-four words per minute. The average speed of the type writer is from forty to seventy-five words per minute, that is, where a single copy only is desired, but as any number of copies from two to twenty can be made at the same time, it follows that with this type writer, and a good operator to use it, from three to twenty hours' work can be done in one hour. Three different kinds of type can be used in the machine.

In the evening the main hall of the building is lighted up in a brilliant manner by the Brush and the Wallace-Farmer electric lights. Of the former there are two No. 5 current machines, each operating four lamps, of 3,000 candle power each, or equal to 200 five-foot gas burners. The machines are operated by a steam engine, and absorb while in action about fourteen horse power. The lamps in use are adapted to burn about thirteen inches of carbon without adjustment, and the carbons last six to seven hours. At the end of this time new carbons may be placed in the lamp in a few seconds without serious interruption of the light. The light produced is a pure white light, like that of the sun. It is very steady, and delicate shades of colors may be detected as well by its use as by sunlight. Another peculiarity of electric light is that it produces very little heat, and gives off an inappreciable amount of non-respirable gases. An equal amount of gaslight produces nearly two hundred times as much heat and about the same proportion of non-respirable gases. The healthfulness of electric light is therefore a great point in its favor, as compared with any other artificial light, and there is no danger of fire or explosion in its use. The steadiness of the light produced by the Brush apparatus is noticeable.

AMERICAN GOODS IN BRAZIL.

In a long and somewhat rambling commentary on the markets of Brazil, a correspondent of the *Evening Post*, writing from Rio de Janeiro, mentions some things worth heeding by those who intend to send goods thither. Following the list of articles forming the cargo of the pioneer steamer, the writer notes that drugs are not likely to gain a large sale. There is a decided preference for French goods, while the experience of the English in supplying the East Indies and other tropical markets gives them a very decided advantage over new rivals. Books will meet with only a limited demand. For rice machinery the prospect is poor, since the cultivation of rice is dying out. Mule shoes are subject to heavy duties, and can scarcely compete successfully. For cut nails there is no market, the French wire nails being preferred, though more costly, owing to their superior penetrating power. Cotton drills should meet with a large sale. So, ultimately, with iron machinery, though it is difficult to compete in cheapness with articles of English and Belgian make. There is, too, a prejudice against American machinery, owing to its lightness and seeming delicacy, which will have to be overcome. Our wood-working machines are often found to be too light for the hard, tough woods of Brazil. American boots should succeed. The market, however, is not so large as the population of the country would suggest, the great mass of laborers, Portuguese, and negroes going barefoot or wearing wooden-soled shoes. We are inclined to think that this custom will not hold out long against cheap and durable shoes of leather. Our printing presses are found to be so superior to those of the French, that they are sure to compete successfully. Small printing offices are numerous, and although they are able to command only small and cheap presses, it is to these rather than to the few large establishments that our press makers and type founders should pay special attention. The market for sewing machines is good, but it will be up-hill work to conquer the prejudice of the people for a long-established American machine of Glasgow make.

American kitchen ware and cutlery are slowly winning favor. In miscellaneous hardware the trade is yet small, owing to the cheapness of European products and the popular prejudice against the lightness of American articles. Hats, if cheap enough, will command a large sale. In the cities the tall, uncomfortable silk hat is almost universally worn. American rifles and pistols are too good for the market. The Brazilian is very little addicted to the use of firearms, and is satisfied with the cheap trash supplied by Belgium. The market for printing paper is not promising, the cheap English and Belgian papers being generally used. Our printer's ink is meeting with ready sale and gives good satisfaction. American type stands high, notwithstanding its greater cost, owing to its toughness and finish. American axes are unexcelled, and are selling in every part of Bra-

zil, in spite of the circumstance that the Germans are flooding the market with an inferior article bearing American makers' trade marks. American clocks sell well. American furniture can be found throughout the greater part of South America. Complaints of its frailty, however, are too frequent. Lard and flour are staple articles, and are sold largely. American butter lacks keeping qualities, and is therefore unsalable.

Some Benefits of the Hard Times.

Commissioner Williamson, of the General Land Office, has prepared a comparative statement of the disposal of public lands during the fiscal years ending June 30, 1877, and June 30, 1878, which shows a general movement Westward during the past year from regions of the East. In nearly all the prominent Eastern cities societies of emigration have been engaged in forming colonies from among mechanics and unemployed laborers with a view of settling them by companies or colonies on the rich lands of the West, and thus relieving the cities of their superfluous and idle population. As Commissioner Williamson says, all this is certainly the good that has come from the evil of hard times. The mechanics, instead of sitting down to groan over the dullness of business prospects, have packed up their families and gone where work will bring an honest return.

Taking Dakota, Kansas, Minnesota and Nebraska, the comparative statement of the disposal of lands during the above periods shows how vastly the emigration has increased. Lands are disposed of by cash purchase, by homestead settlement, for timber culture, and by warrant and scrip location; four different methods, and the records of each are preserved separately in archives of the General Land Office at Washington. For Dakota the figures are:

	1877.	1878.
Cash.....	20,336.62 acres.	74,940.93 acres.
Homestead	123,869.82 acres.	804,298.66 acres.
Timber culture	68,188.92 acres.	570,224.34 acres.
Warrant and scrip location.....	5,983.04 acres.	12,346.80 acres.

The table shows an increase of 1,243,423.53 acres in one fiscal year. The same figuring for Kansas shows an increase of 1,356,478.68 acres; for Minnesota, 761,356.10 acres; and for Nebraska, 363,268.98 acres; making a grand total in these four localities alone of 3,724,572.29 acres. Reports show that this business is going on, and that the settlers are doing well. The *New York Tribune* says that the colonies that went to Kansas and Dakota from New York, through the instrumentality of John Kelly, about 4,000 strong, and those that went from Baltimore and Philadelphia, Indianapolis and Boston, are prospering beyond their expectations.

Autumn Suggestions.

Very decided changes in temperature come about at this season, and often without warning. Fresh, cool days are followed by others warm and moist. The *Philadelphia Ledger* tells its readers that it is unhealthy to shiver, and not either pleasant or salutary to sit about while under the sensation of even slight cold. Housekeepers should take care that some apartment in their dwellings is sufficiently warmed by stove or range or furnace to be comfortable. Health, no less than personal satisfaction, is involved in this matter. The slight ailments and occasional serious diseases which mark the change of season arise usually from inattention to the warnings which the body gives in its protests to discomfort. It is said by some to be heroic and hardy to endure the preliminary touches of winter. But it may be that the hero or heroine is simply indolent, and afraid of the labor or care involved by going into winter quarters.

The trees retain their foliage in luxuriant green, and all vegetation is very rank. This late verdure is beautiful, but, like many beautiful things, treacherous. Trees may have malaria lurking about them, more especially when the heat of noon is in wide contrast to the cold of midnight. Nature's chemical processes of the kind that are injurious to the human constitution are accelerated in autumn. As in the laboratory the manipulations of the operator give off gases, so in nature the combinations and changes which are constantly going on affect the wider circle of that grand laboratory, the world which we inhabit. The housekeeper must guard against these influences. The sunlight must be admitted to dwellings—the midnight it is well enough to keep out, except so far as to provide ventilation. Philosophers tell us of the "storing of heat." A simple test and proof of this theory is in the warming of the house by the cheerful sun, and the storing of the heat by preventing its escape as the decline of day weakens the warming rays.

Another seasonable hint is in order, in which the fire brigade and the insurance companies are also interested. The heating apparatus of every building, whether used for dwelling or for business purposes, should be thoroughly examined and put in complete repair. Metal corrodes during the summer, and flues become choked. Hence, from the neglect of precaution, cold weather is ushered in by fire alarms, and the report of casualties ranges from slight up to serious conflagrations. Now is the time for the housekeeper's tour of inspection over the premises (with a glance at the coal-bin, if that is not already filled). All these preparations may be conducted leisurely and comfortably at this time, with no interruption from cold hands. And if mechanics are needed, they will come for the calling, and be glad of the opportunity. A month hence, when the cry is universal, you might as well call "spirits from the vasty deep" as invoke the stove dealer and the plumber.

Curiosities of the American Exporting Trade.

American enterprise in the struggle for supremacy in the world's market has been handicapped by six serious drawbacks. These are, lack of means of transportation, high rates of interest on capital, high rates of marine insurance, carelessness in packing, waste of material in manufacturing, and an omission to make concessions to the local prejudices of outside barbarians.

A good time will probably come when these will all be removed, and then adieu to Communism, pauperism, half-time, over-production, and all the other real or imaginary evils of the day. Kearney will become a bloated bondholder, Schwab will own a brewery and supply beer to the Bavarians, Chinese cheap labor will be welcomed by its whilom opponents turned manufacturers, greenbacks will advance to a premium, gold will be a nuisance, subsidies to steamship lines will be regarded with contempt, and many other equally incredible things from the present point of view will come to pass.

Meantime, Yankee pluck, even with all the odds above mentioned against it, is making a gallant race, and is fast closing upon its antagonists. This is especially true of the past few years—since 1875.

Taking the figures of 1875-6-7 as a basis, we have advanced at the rate of £6,000,000 in two years. Our exports to-day are more than double those of 1860, in which year there was a very heavy export trade, the one article of cotton alone amounting to over \$190,000,000, more than twice the cotton export of 1855. In the fiscal year ending June 30, 1878, the increase over 1877 was nearly \$65,000,000, or about 11 per cent., and this notwithstanding the greatly lessened demand for war material consequent upon the cessation of hostilities abroad.

The possibilities of the future are enormous. To say that our progress promises to equal that of the past three years is to claim too little. The least we may look for will be an expansion on the compound interest plan.

Our dry goods are superior to those of England, and are preferred wherever they are entered into direct competition with them. Not to put too fine a point upon it, English cotton goods are composed of one part cotton and three parts clay or other filling, while those manufactured here are without make-weight of any kind. American iron is naturally of three or four times the tenacity of English iron, and so on to the end of the list.

In variety or excellence of raw material, no country on the face of the globe can begin to compete with us. European mechanics bear no comparison in skill or intelligence with ours.

An American will turn out four times the quantity of work that a German or an Englishman will in the same time, and he will do it much better. Wages and the price of living have become so reduced on this side of the ocean that in many instances they are lower than in Europe. We have the aid of an unlimited variety of labor-saving machinery, a great deal of which is not known abroad, and nearly all in use there has been imported from this country.

A German gentleman informed the writer that, wishing recently to establish a branch house in his native city, Berlin, he employed the carpenter who has the patronage of the court, and is therefore supposed to be of exceptional skill, to put up for him a wood and glass partition similar to those used in counting-houses in this country. The job occupied six weeks, whereas here six days would have been sufficient. All the mouldings had to be made by hand with clumsy, old-fashioned tools, and the workmen seemed to be mere machines running in a groove, and ambitious only to accomplish as little in a given time as possible.

An American lady in Vienna, in a hurry to catch a train, went into a saddler's shop—trunk stores are unknown there—to order a strap for her trunk. She was told that it could not be made in less than a day. In New York, supposing there were none in stock, a special machine would have turned it out in two minutes. Incidents might be multiplied indefinitely to illustrate this branch of the subject.

Every American who has ever traveled abroad can furnish several from his personal experience. Should proof be needed that all that has been said is true, it may be found in abundance in the columns of the English newspapers. These are filled with complaints of American competition and consequent loss of home trade. One paper—the *British Mail*—tells of a house in Birmingham which is manufacturing "Yankee pattern household sundries, such as egg-whisks, nutmeg-graters, etc.," and placing them on the market as American goods. In another we learn that several extensive padlock makers in the South Staffordshire district are "busy at work upon an order for padlocks upon a favorite United States pattern," and American manufacturers are warned to immediately register their trade-marks in Great Britain under the new treaty. Could any plainer acknowledgment of defeat be given than this?

In all American exports—including breadstuffs—since the foundation of the Republic, three commodities have stood forth prominent in amount and value—cotton, tobacco, and cheese, and of these cotton has been the king. Yet will it be believed that in 1784 an American ship which carried eight bags of cotton into Liverpool was seized on the ground that so much cotton could not be the product of the United States?

In the fiscal year 1860, during which the largest crop was raised and the greatest quantity was exported, 1,767,686,338 pounds were sent abroad, over 1,265,000,000 going to Great Britain.

Tobacco to the amount of 55,000 pounds was exported as early as 1621. Since 1790 we have sent abroad 9,529,123 hogsheads, equal to 13,000,000,000 pounds. To transport this vast product would, it is estimated, require 19,058 ships, carrying 500 hogsheads each, or a yearly average of 216 vessels of that capacity. Will somebody put that in his pipe and smoke it?

Last year, according to the official report of the Commissioner of the Internal Revenue, a greater quantity of manufactured tobacco, and more cigars and cigarettes, were removed directly from the manufactories for exportation than during any previous year of which an account has been kept by the Internal Revenue Office. The excess in tobacco over the year preceding was nearly 3,000,000 pounds. Of the total amount, England takes over 1,000,000 pounds; Australia comes next, Germany next, and the United States of Colombia next. There is scarcely any spot in the civilized world to which we do not export our manufactured tobacco direct.

In Germany the clippings or refuse of the cigars made in this country have recently found a profitable market at from two to five cents per pound. Formerly these clippings were allowed to accumulate in American manufactories for months, until some speculator happened along and took the lot for a song. Now agents have been sent out through Canada to buy up all they can find, with a view to shipping it to Europe.

Immense quantities of American made cigars have, within the past year, been sold in England, where they are eagerly purchased as cheaper and more suited to the popular taste than any cigars heretofore imported into that country. On one day in March last a single shipment was made aggregating 141,000, and it is estimated that the trade already returns at the rate of \$4,000,000 per year, equal to an annual profit of \$120,000. One firm in this city has even started a factory exclusively for the making of cigars for export to England.

The foreign demand for American cheese exhibits a growth unparalleled by any farm product, except, perhaps, cotton. As recently as forty years ago the exports amounted to but 411,338 pounds. Last year they reached the enormous aggregate of 107,364,666 pounds. If this were loaded on drays, each carrying one ton, and occupying eight yards, the line would extend 244 miles, or a greater distance than from Washington to New York. If the shipment were regular during every secular day, in the year the daily movement to the wharves for shipment would exceed 172 tons.

The quantity of milk used in the production of 107,000,000 pounds of cheese may be computed by those having leisure and sufficient agricultural knowledge. Nine-tenths of this vast amount finds a market in Great Britain, which formerly stood pre-eminent in the reputation of her dairy products. Our dairymen have succeeded in imitating the size, general appearance, and even the flavor of the English production so closely, that being able to sell at a much lower price, they have actually beaten the Englishman on his own ground. New York State, by the way, deserves the major portion of the credit for this triumph, over seventy per cent of the cheese manufactured in this country being the product of her factories. In Germany a demand for American cheese has also sprung up, but it has been too recent to permit of the presentation of the results accomplished.

On the subject of breadstuffs there is no need to enlarge here. Every child knows that this country has been for some time the granary of the world. Nor will the ordinary newspaper reader require to be informed that American fresh meat and mutton, both slaughtered and on the hoof, have, within a comparatively short time, to quote an English newspaper, "deprived the English farmer of his last resource, his stalwart ox," and made the national roast beef a common thing in many a British household where it was a rarity before.

Our refrigerator tonnage, which was but 8,000 tons in 1876, is now 28,000 tons. This covers oysters, butter, fruits, eggs, canned goods, and a thousand and one other perishable articles of food, the export trade of which is increasing enormously from year to year. If this thing keeps on it will not be long before America is the butcher's shop and grocery store as well as the granary and manufactory of the world.

What will be thought of the United States shipping plum pudding to England, potatoes to Ireland, oatmeal to Scotland, toys to Nuremberg, and lager beer to Germany? Yet such are the facts, and they are no more astonishing than the now thrice-told tale of the regular and profitable sale of American cotton goods in Manchester, and American cutlery and hardware in Birmingham.

The business of making and canning plum pudding for export is regularly carried on at Dover, Del., and elsewhere. The trade is not a new one, and exports are regularly made to England. A Philadelphia firm sell large quantities of mincemeat in the same country.

Steamer agents say that potatoes to Ireland are the commonest thing in the world, and the business of shipping them has been of long duration.

On April 23 the *Devonia* took 1,100 bags of oatmeal to Glasgow, from which it must not be inferred that this is by any means an isolated instance, but the first one the writer happened upon in his search for an example.

The export trade in toys, which amounted last year to over \$1,000,000, began some five or six years ago through some presents sent abroad. Now nearly every steamer car-

ries large quantities. The principal articles of export are the mechanical or "clock-work" and the steam toys, but there are also large shipments of tin and wooden toys, most of which class were formerly exported from England or Germany. Wood is much cheaper in America than in Europe, and machines work faster than hands.

Very few mechanical toys are now imported, and only the finer French and Austrian work for show-pieces in windows. American ingenuity has also multiplied the varieties of mechanical toys, and the American manufacturers of the clock mechanism have met all overtures for the purchase of the detached works by European dealers by demanding prices which are practically prohibitory.

In May last a firm of German brewers sent a cask of American lager beer to Count Bismarck, and in due time received a letter from him through the German Consul thanking them. Since the reception of the letter the firm have received several orders from German houses for samples of lager beer, and the head of the concern has sailed for Europe to make arrangements for its regular export.

The Englishman has long had American turkeys regularly at Christmas, and he likes them. In January last a famous English house sent an agent to this country with orders to ship regularly every week fifty barrels of the finest quail, prairie hens, grouse, woodcock, wild turkeys, canvas-back ducks, and other American game that he could procure. The enterprise has proved a great success. Buffalo and antelope meat, venison and salmon are also among the innumerable articles of food sent from this country, not only to England, but to nearly every other civilized nation.

It would be unpardonable to close this paragraph, incomplete as it necessarily is, without a mention of the fact that a Boston company are turning out 8,000 cans, equal to 24,000 pounds, of baked beans and codfish-balls daily, and that it finds a large demand for both specialties in England, France, West Indies, and South America.

Room is lacking to pursue the subject to the extent it deserves, but there are numerous other points in the American export trade that must be both novel and curious to the general reader. Take the item of coffins, for instance. Coffins and caskets in the latest styles have long been among the regular articles of shipment abroad, and they command a large sale among the subjects of the effete monarchies. A warehouse containing 2,000 of American make was recently opened in London. Think of exporting hoop-skirts at this late date. Twenty-two dollars' worth went abroad last year.

Berlin has sent a large order for corsets to Worcester, Mass., and another for American silk to Rockville, Conn. Will any one question the good taste of the German ladies after that?

Essex, Mass., exports steel pens to England.

An American firm have made a complete outfit of locks for the new Imperial Post Office in Bremen, where the American system of lock-boxes has been introduced.

Two cargoes of American coal were recently sent to Italy, and were sold readily at \$7 72 per ton, which covers cost and freightage and leaves a fair margin of profit. Heretofore, over 200,000 tons of English coke per annum, at \$11 58 per ton, has been used in the Mediterranean basin.

A staple article of export to South America and the West Indies is patent water-closets. Another is American confectionery.

Peanut oil, from North Carolina, sells well in Italy, and cotton seed oil has almost taken the place of olive oil throughout Europe. The export of this latter commodity jumped from 281,000 gallons in 1876 to 1,705,000 gallons in 1877.

American jewelry goes everywhere, and American watches have nearly if not quite driven Swiss and English made watches out of their own markets. The British Government purchased 200 stem-winders in December for the use of conductors and engineers on one of the State railroads in India, and in February an agent of the Rotherham Watch Company of England visited this country and ordered a number of sets of the tools and machinery used here.

A Newark, N. J., sash and blind manufacturer filled a large order for shipment to Turkey in June. A Troy bell-founder has recently fitted out churches in Constantinople and Bangkok.

American locomotive manufacturers are hard at work filling orders from Russia and South America. Our carriages, street-cars, and vehicles of all sorts are being sent in all directions. Our petroleum lights the world. Statuary and paintings are regularly exported from this country to Europe. Think of it!

Among other important items of export are books, scientific instruments, wines, pianos, carpets, furniture, toilet soaps, fine and coarse boots and shoes, glassware, scales, stoves, leather, writing inks, slates, marbles, pins, and tools and machinery of all kinds. And the best of it is these things sell on their merits, and not on account of their cheapness. But the list is unending.—*N. Y. Times*.

MARBLE is a limestone that has become crystallized and hardened by heat so as to be capable of receiving a high polish. The action of heat on ordinary limestone is seen wherever such strata have come in close proximity to granite, the heat from which, when in a molten state, having converted the limestone into crystalline marble. The various colors of the marbles are due to the admixture of the oxides of metals, iron giving the red and brown tints, copper the green, and manganese the black.