

Another individual bores out a wheel to "fit" it by his wooden rule; and the consequence is that, between them, about a sixteenth of an inch of daylight passes through the wheel when the shaft goes in, or else there is a similar quantity of iron to be forced through the bore of the wheel in excess of the proper measurement. These are not instances created for the sake of maintaining our assertion that some system is required, but are cases of too frequent occurrence, as every one familiar with the routine of a machine-shop can testify. What is true in the case of lathe-work is also correct as regards every other transaction, where fitting depends upon actual measurement. The steel scale is an excellent substitute for the box-wood rule, and should be more generally employed by workmen; but none of these can compare in value with a set of standard gages; such as are used in the Novelty Iron Works in this city, and other large and smaller machine works throughout the country. These gages, we believe, are made on the Whitworth standard, and for sizes of 3 inches are divided into sixteenths, while beyond that they are only graduated to eighths of an inch. These gages can be made so that one end can be used in turning a shaft, while the other end is flattened like a fish-tail, and reduced to exactly the dimensions of the calliper ends. Thus a shaft turned by one end, and a hole bored so as to fit the opposite part, will cause both wheel and shaft to fit each other beautifully, without loss of time. This is so much better than the old-fashioned way of using callipers for the purpose, that the two are not to be spoken of in the same breath.

Every part of the machine business can be made the subject of a general and thorough reform. There are numbers of establishments in which wooden chucks, mandrels, bolts, washers, old files, stray hammers, lathe-tools, and every conceivable thing are scattered under the benches, lying on window-sills, and trodden under foot generally. What a spectacle of slovenliness and disorder such a place presents! And what a commentary it is upon the character of those in charge. The pecuniary loss sustained by such a state of things is enormous, and might be dispensed with by having everything in its proper place, and a regular and recognized system of procedure for all, so that work would not be spoiled by carelessness. One of the many advantages would also be soon apparent in encouraging a better class of workmen, and result in good to the whole trade generally.

#### ICE.

It is not unpleasant at this season of the year to revert to the Polar seas, and the icebergs which slowly circle and drift therein, impelled by the resistless force of the tides. Viewed from this distance, the imagination lends them a charm which a nearer approach, or sudden contact in a vessel, would rudely dispel. If—instead of breeding fogs by drifting down into warmer latitudes, or creating terror in the heart of the mariner as he sees one of them in the grey dawn slowly bearing down upon his becalmed ship—in the place of these perils some enterprising person should boldly make fast to one of them, and tow it down off our harbor, he would find himself the possessor of a handsome sum of money though in a somewhat awkward form; for all ice, whether from salt or fresh water, is fresh, or sufficiently so for use. The value of the ice trade in this country is something important, considering the nature of the article, and the universality with which it has been adopted. Indeed from being at one time a luxury which only the rich could afford to use, it has taken place as an actual necessity; and the procurement of it, in winter, gives employment to a large amount of capital, and a great number of individuals. Of old, the nations of the world who were celebrated for their luxurious tastes, cooled their beverages with frozen snow obtained from the peaks of the mountain ranges running through their several territories; and even to this day, in some of the South American States, the scantily-clad Indians or mestizoes, bear to the homes of the wealthy the frozen snows of the mountains. Of course this is a laborious process, and the refrigerant itself of necessity must soon waste away. With us the case is different, and in our cities the canvas-covered carts, richly freighted with the huge blue blocks, go from house

to house to deliver their burden, and are eagerly welcomed. For many centuries the annual frost and snow has covered the earth, and acres of water, changed by the subtle chemistry of nature into sparkling ice, have melted again upon the approach of warmer suns, and no one seemed to have conceived the importance of storing it up for use during the sultry portion of the year. At length, Mr. Frederick Tudor, of Boston, conceived the idea that ice might be made a source of profit; and in 1805 he shipped a cargo of it to Martinique. The ice was cut from the lakes with axes, and shipped at once. As in nearly every commercial enterprise, where the field is novel and untried, and experience has not suggested the proper method of procedure, the venture proved a failure, as did also several succeeding ones, until the war put an end to all trade whatsoever. Mr. Tudor was not, however, disheartened; and with an energy and determination sufficiently remarkable, considering the nature of the case, immediately resumed the business in 1823; and at length, extending his shipments to the West Indies, found his scheme successful. Of course, so long as it was a losing business, mercantile men kindly permitted him to enjoy the field undisturbed; but so soon as it was clearly shown to offer profitable employment for capital, a number of disinterested persons gave it immediate attention. Up to 1832, Mr. Tudor was alone in the ice trade; but he then began to ship to Calcutta in addition to other ports.

Such was the rise of the ice trade in this country as compiled from good authority. The progress of it may be noted in the fact that while in 1832 the amount shipped was but 4,352 tons, cut from Fresh Pond; in 1854, it had increased to 154,540 tons. The annual domestic consumption of ice since then is stated to be 70,000 tons in New England, and in New York nearly 285,000 tons. It is said that all of this vast quantity is obtained from lakes along the water-course of the Hudson river. The large cities in the Northern and Western part of the State also lay up vast quantities in addition to these enormous amounts, and tons untold are sent abroad to various parts of the globe. The price, of course varies with the supply; the demand is unlimited. The average price is stated to be, in good seasons, at from \$2 to \$6 per ton for shipping; and for families, by the season—May to October—\$5; at the rate of 9 pounds per day; 15 pounds are served for \$8, and 24 pounds for \$12. The pounds of the iceman are, however, an algebraic expression, or unknown quantity; and the general supposition is that they deliver at the weight with which they started from their depots, without making any allowance for loss by waste. Out of three weeks that we, as a matter of curiosity, weighed ice that was delivered and paid for as 100 pounds per week, we obtained upon an average 65 pounds. During the present year the price of this necessary has been greatly enhanced by the avarice of the companies who monopolize the trade, and they are doubtless making money rapidly.

#### THE FIELD FOR LABOR.

Recent observation in several parts of the Eastern States has convinced us that the condition of the laboring population in the rural districts is immeasurably superior to the lot of the same class in the city. And this, on many accounts; not the least of which is the material benefit, pecuniary and physical, to be derived from the fresh air, wholesome food, and healthy surroundings of the country. Any one who has ever observed the tenement houses in cities—the manner in which the laboring population herd together—the stale vegetables which they are obliged, from motives of economy, to purchase—the influence of dram shops, and the countless incentives to vice and misery which exist on every hand, cannot but wish that a large proportion of the poorer classes in great cities would transfer themselves and families to the open fields, pure air and simple living of the country. At this juncture, especially when the calls of war have so materially diminished the surplus of labor, when the harvest, ready for the sickle, nods its head impatiently for the reaper to come and gather it in, an opportunity is presented to the poorer classes of crowded towns to settle themselves permanently where they can hope to become forehanded in a reasonable time. The advantages which a cheap

rent, a small plot of land wherein to grow vegetables, and other features of rural life present to mechanics, as well as the more common laborers, are not to be slighted; and the manufacturers in towns throughout the Northern States can employ a vastly greater number of hands than they can at present obtain.

If the laboring population would avail themselves of this privilege, we should have a continually changing class, which would result beneficially to us, and to them; for the new men would not be imbued with the vices of the old, and those who went forth from the city would soon lose their false ideas of the division of wealth, in healthy and remunerative employment.

#### THE LENOX PLATE-GLASS COMPANY.

The rough plate-glass works at Lenox Falls, Berkshire county, Mass., are the only ones of that class in the country. We recently paid a visit to this factory, which was idle at the time, in order to prosecute needful repairs to the furnaces, and introduce some improvements deemed necessary. We found a large stock of fine plate-glass, from one-fourth of an inch in thickness up to an inch and more; and some ten or twelve feet in length, by three or four feet in width: in fact sheets of the largest size are produced here with ease. The process of making the plates is quite simple, all the machinery necessary for the purpose being comprised in a large cast-iron bed, planed true on the face, provided with raised edges at the sides, on which a large cast-iron roller runs; the roller is about 16 inches in diameter. The fluid glass is poured on the table, the roller pushed over its surface, and the plate is then done. There are several furnaces in the works, for annealing or baking the plate to render it less brittle, which are very extensive. The furnaces are all heated with wood.

The crucibles or pots in which the glass is melted, are made on the premises, from clay, which being brought from Germany, is quite costly. One pot holds about 450 pounds of glass, and will last about four weeks. The fine quality of the Lenox plate-glass is due chiefly to the excellent sand found in the neighborhood, which is a species of disintegrated quartz rock common throughout Massachusetts. This is pulverized and sifted, and is of a beautiful white and glistening appearance. The company have had considerable difficulty in making a market for their goods; as wholesale dealers in the cities were not disposed to purchase of them. They succeeded, however, in creating a reputation for their glass among small dealers, which they soon increased to an extended business acquaintance; and they are now doing very well. It is designed to introduce machinery, for grinding and polishing the glass, so as to produce the finest qualities of window and mirror glasses; but this has not yet been accomplished for the want of adequate machinery. It is the intention of the company, however, to prosecute the idea at an early day: so soon as the necessary preparations can be made. There is no reason why an article equal to the best French plate-glass cannot be made in this country, by the introduction of adequate means for polishing and finishing.

#### THE INTERNATIONAL STEAM FIRE-ENGINE TRIAL.

The report of the Committee on the steam fire-engine trials—noticed in our issue, last week—has been made; and the prizes have been awarded. In the large class engines, the first prize of £250, was awarded to Messrs. Merryweather & Son; second prize of £100, to Messrs. Shand & Mason. For the small class engines, the first prize of £250 was given to Messrs. Shand & Mason; second of £100 to Messrs. W. Lee & Co.—for the "Alexandra"—American engine.

The weight of the engine which gained the first prize was 2 tons, 18 cwt.; that of the one which gained the second prize, 2 tons, 28 lbs. The American engine, which competed—the "Victoria"—belonging to J. Butt & Co.—weighed 2 tons, 14 cwt.; W. Robert's engine weighed 1 ton 19 cwt.; Easton, Amos & Son's, 2 tons 18 cwt., 84 lbs. This engine did very well in one trial; but injured its furnace so much as to be thrown out for those which followed. The large engines had four trials; two of which com-