

A MECHANICAL EYE.

No mechanic can ever attain distinction unless he is able to detect ordinary imperfections at sight, so that he can see if things are out of plumb, out of level, out of square, and out of proper shape; and unless he can also detect disproportioned or ill shaped patterns. This is a great mechanical attainment. I say attainment, because it can be attained by any ordinary person. Of course there are defective eyes as there are other defective organs; the speech, for instance, is sometimes defective, but the eye is susceptible of the same training as any other organ. The muscles, the voice, the sense of hearing, all require training. Consider how the artist must train the organ of sight in order to detect the slightest imperfection in shade, color, proportion, shape, expression, etc. Not one blacksmith in five ever attains the art of hammering square; yet it is very essential in his occupation. It is simply because he allows himself to get into a careless habit; a little training and care is all that is necessary for success.

The fact is that the eye is not half as much at fault as the heedless mind. Some carpenters acquire the careless habit of using a try square every time they plane off a shaving, in place of giving their minds right to their business and properly training their eyes; and unless they cultivate this power of the eye, they will always be at journey work. Look at the well trained blacksmith; he goes across the shop, picks up the horse's foot, takes a squint, returns to his anvil, forges the shoe, and it exactly fits the foot. Contrast him with the bungler who looks at the foot, then forges a shoe, then fits the foot to it, often to the ruin of a fine horse. Now the fault lies in ever allowing himself to put a shoe on that is not in proper shape for the foot; he should determine to make the shoe fit the foot in place of the foot fitting the shoe, and he should follow it up until the object is accomplished.

A very good way to discipline the mechanical eye is to first measure an inch with the eye, then prove it with the rule, then measure a half inch, then an eighth, and so on, and you will be soon able to discover at a glance the difference between a twelfth and a sixteenth of an inch; then go to 3 inches, 6, 12, and so on. Some call this guessing; there is no guess work about it; it is measuring with the eye and mind. Acquire the habit of criticising for imperfections every piece of work that you see, do everything as nearly as you can without measuring (or spoiling it), or as nearly as you can trust the eye with its present training. If you cannot see things mechanically, do not blame the eye for it; it is no more to blame than the mouth is because we cannot read, or the fingers because we cannot write. A person may write a very good hand with the eyes closed, the mind, of course directing the fingers. The eye is necessary, however, to detect imperfections.

Every occupation in life requires a mechanically trained eye, and we should realize, more than we do, the great importance of properly training that organ. J. E. E.

Trade Marks.

Every person, or firm, doing business, no matter of what kind or nature, so long as it is honorable, should have a trade mark. It serves as an advertisement, and the first mere nominal cost is a trifle, and yet in a year's business the same amount of advertising would cost hundreds of dollars. The trade mark is a distinction that cannot be imitated, as the law protects it. Americans who excel in the manufacture of certain classes of goods, and place their goods in European markets, soon discover that they are not only in competition with the best makers of the same line of goods, but find that their trade mark protects them from imitation and counterfeit. Ingenuity can be called into exercise by the use of trade marks. Some use an almost indescribable monogram; others are eccentric or unique ones, but the most appropriate is the concentration of aptitude in the especial business in which parties are engaged. If a pyrotechnist, he would not use for a trade mark a fire engine engaged in putting out the flames of a building. There should be an eternal fitness of things. There are many people engaged in the same business, yet it would not be at all difficult to have an especial originality in their designs. Let manufacturers put a trade mark upon all their productions, and let dealers do the same to all the wares they send out. It is a protection to the former, and of vast business benefit to the other.

[The above from Gear's *Mechanical Advocate* is good advice. Manufacturers in this country, as a class, do not sufficiently appreciate the advantage of adopting some emblem appropriate to their business and securing it to themselves by registering it as a trade mark. The expense is small, compared with the advantages of such protection. In England, many manufacturers are very particular to register their trade marks, and a great number of them whose goods are sold in the United States register them here also. Parties at home or abroad can receive full instructions as to securing trade marks by addressing the publishers of this paper.—EDS.]

Design Patents to Foreigners.

Strenuous effort was made at the last session of Congress by some of our largest carpet manufacturers to get the law repealed which allows foreigners to take patents on designs in this country. Since the law was enacted permitting foreigners to secure their designs by letters patent, carpet manufacturers in England have availed themselves of the privilege to a great extent, and they have paid considerable money into the Patent Office for fees. In several weeks, hundreds of dollars have passed into the Treasury through this office alone.

Manufacturers here, who have so long found it less expensive and more convenient to adopt the new designs of foreign manufacturers than to employ native designers, are greatly dis-

turbed because they can no longer practice the course formerly pursued by them. We hope Congress will refuse to repeal the law, but strenuous effort will be again made to accomplish it. Foreign manufacturers will do well to consider the probabilities, and such as would make sure of protection will lose no time in seeking it.

A pamphlet containing the law and full particulars as to patenting designs may be had at the office of this paper.

THE FAIR OF THE AMERICAN INSTITUTE.

The Fair is now in the full tide of success. Not only during the evening but throughout the entire day, throngs of visitors fill the building. Articles are still slowly coming in, but the general prediction of an increase in the number of entries over that of last year is, in our opinion, not likely to be fulfilled. The fact, however, can be explained, first, by the excitement attending the elections, which has diverted popular attention to other channels, and, second, by the unusually large fairs of Cincinnati and Louisville, to which many objects have been contributed which otherwise would have found their way to New York. Still the exhibition is highly creditable, and it is certain that there is no place of amusement in the city where an evening, a day, or even a week, may be more pleasantly and profitably spent.

The latest novelty that has been added to the machinery department since our last visit is an excellently designed and compact 3 horse power steam engine, from the Vulcan Manufacturing Company, of Fishkill, N. Y. The cylinder is vertical, and piston valves are employed. The principal point of advantage in the invention is an ingenious automatic arrangement whereby the governor, in event of the belt breaking, is caused by the action of a spiral spring to turn back in such a manner as to close the valve and so instantly to stop the engine.

For the present, and until other new inventions are added, we now leave the department of machinery, to which our notes heretofore have been exclusively devoted, and proceed to extend our rambles through other portions of the exhibition. A word of acknowledgment of our indebtedness for much kindness and courtesy is due to Mr. R. H. Buel, the superintendent of machinery. This gentleman, in his administration of the affairs of his department, is performing a disagreeable task in a most agreeable manner, and is winning well earned praises even from that unhappy class of exhibitors who invariably send their goods to the Fair and as invariably find cause to become indignant over imaginary ill treatment—after the exhibition has concluded.

THE DEPARTMENT OF THE DWELLING

is, to the general visitor, perhaps the most interesting portion of the display. Each year brings a host of new inventions, most of which are calculated to lessen the drudgery of household labor and render "women's work" easier to perform. One of the first articles that attracts our attention is a steam coffee roaster. A tin boiler, of about a foot in length and two or three inches in width, supplies steam to a toy oscillating engine, which turns a wire gauze cylinder in which the berries are placed. It is only necessary to set the machine in motion and leave it to itself until the coffee is roasted. The idea is an ingenious one, and probably an initiatory step to the introduction of steam power for the accomplishment of ordinary household duties; but then it seems to us that the apparatus in question is a shade beyond the intellectual capacity of the general type of Milesian handmaid. Near by is another article for culinary use which is an application of an old principle, and which should have been introduced long ago. It is termed

WARREN'S COOKER,

and consists essentially of two pots placed one within the other, the space between being filled with water. The substance to be cooked is placed in the inner pot and covered tightly, while the water in the outer vessel is caused to boil, when the apparatus is removed from the fire or set back on the range. The vessel containing the water, being hermetically closed, retains the warmth, so that the cooking process continues even after the source of heat is removed. It is stated that articles thus prepared lose none of their natural juices, and are better and more economically cooked than by any other method. For laborers, factory hands and others who generally have to carry their dinner to their work with them, eating that meal cold, the apparatus, we think, may be modified so as to be of considerable value. A small size of interior kettle will hold the meat, vegetables, etc., required for the meal, and the water in the outer vessel may be heated before leaving for work in the morning. Then the entire arrangement may be placed in a wooden box of convenient shape lined with boiler covering or other non-conductor of heat and tightly closed. No more attention is necessary until noon, when, on opening the pot, the dinner will be found excellently cooked and smoking hot. In

WASHING MACHINES,

we note none of especial novelty at present. The porcelain wash tubs exhibited last year are again presented, but we think that the similar conveniences of slate from the Penrhyn Slate Company are in every respect as well adapted for the purpose, while they are far less expensive.

NELSON'S GLASS DECORATIONS,

designed for application to walls, ceilings, etc., are worthy of a word of commendation. Ordinary sheet glass is painted in imitation of marble, wood, or in variegated patterns, and then firmly cemented to the plastering. The effect is very rich; the high polish of the material giving the appearance of elaborate finish.

DURAND'S SILVERED MIRRORS

are remarkably handsome and well worth examination. We

notice one large specimen in particular, composed of a single plate of heavy glass surrounded by an exquisite border of filigree work in silver and gilding.

Slate mantels, from the various firms engaged in the manufacture, are displayed in every style. These have been so largely introduced into modern dwellings that we need make no special comment regarding them. The

MATTRESSES

are almost all variations on the well known and excellent network of wire, the points of difference lying in the arrangement of springs, etc. There is one novelty among these: a system of making both pillows and mattresses of bent springs distended by spiral coils of heavy wire. As usual, the inevitable bed to be presented to the President of the United States is on hand. As a matter of curiosity, we should like to be informed when that donation is to take place, as to our certain knowledge the same, or a very similar couch, has been on exhibition under the placard for two previous Fairs.

Messrs. J. and R. Lamb, although they have almost a monopoly in the manufacture of church decorations and furniture, exhibit such excellent work that we cannot refrain from giving it a word of praise. Similar credit is due to Messrs. Mitchell, Vance & Co. for a display of superb designs in gas fixtures, bronzes, and chandeliers. There is an ingenious little invention, attracting considerable attention in this portion of the building, known as Batchelder's

ELECTRIC TORCH,

which consists of two disks of hard rubber and leather which, when rubbed together, generate sufficient electricity to give a spark in the interior of a bell-shaped end of a long bent arm. In shape, the device resembles an ordinary spirit lamp gas lighter, the curve in the arm permitting it to be used while the globe on the fixture is in place. Another similar apparatus is exhibited, made with disks as above, which are attached directly to the burner, instead of being portable.

Passing out of the department of the dwelling and on to the main floor of the hall, we stop before a case of articles made by a process that is rapidly superseding the more expensive, though perhaps more artistic, method of carving in wood by hand. The work is made of

COMPRESSED WOOD.

Ordinary carpenter's shavings are pasted together at the edges in sheets, which are again attached together in layers of fourteen thicknesses. The board thus made is placed between brass dies and subjected to the action of a powerful hydraulic press which forces the wood into the matrices, molding it into the required form. The piece is then removed in the shape of a thin veneer, and is backed by ordinary material cut to the proper size. As the shavings of any kind of wood may be employed, it is evident that the most valued and elaborate carvings may be imitated.

On the right hand side of the hall are a number of tables and shelves covered with a remarkably fine display of the PRODUCTS OF THE LAND DEPARTMENT OF THE NORTHERN PACIFIC RAILROAD,

including fruits, cereals, vegetables, and minerals. The vegetables are exceptionally large and fine, while the fruits and cereals give abundant proof of the wonderful fertility of the soil. The idea of thus bringing home to the people of the Eastern States the immense resources of our undeveloped Western territories, is worthy of special commendation, while such a method serves to describe a particular section of the country better than any number of brilliantly written and illustrated pamphlets or circulars.

In concluding our notes for this week, we must express our regret that it has been considered proper to admit peddlers to the Exhibition. We would suggest to the management that the "Professor," who executes sundry worn-out tricks of legerdemain to gather a crowd in order to sell political caricatures, and the individual who at stated intervals smears his raiment with a tallow candle for the purpose of removing the grease thereof with a "magic" compound, are not representatives of the industries of the American people. We also have to protest against exhibitors being permitted to cry their wares after the fashion of Chatham street vendors of second-hand garments. It is not agreeable to a nervous visitor to be suddenly startled by a yell in his ears like a Comanche war-whoop, or to be further annoyed by bottles of patent cement or vermin exterminator thrust before his eyes. These things may be pecuniarily lucrative to the Fair, but they decidedly detract from its merits and belittle the dignity which it should, at least, strive to maintain.

There is another subject to which we intended to revert some time since, but which has hitherto escaped our memory. We allude to the exceedingly questionable taste that allows of the exhibition of such objects as burial caskets and other receptacles of the dead. To a great many persons the sight of an infant's coffin, particularly such as are here exhibited, decked with satin and lace and opened as if to receive the body, is especially painful and distressing. If such articles must be displayed, let it be by small models, which will serve every purpose and not alloy the pleasure of visitors by forcing into prominence the somber paraphernalia of the grave.

Facts for the Ladies.—Mrs. B. H. Man, Westville Centre, N. Y., has used her Wheeler & Wilson Lock-Stitch Machine constantly since 1854 in sewing for several families, without any repairs; eleven persons have learned to use it. See the new improvements and Woods' Lock-Stitch Ripper.

A Complete Clothes-Wringer.—The latest improved Universal Wringer has movable metal clamps and thumb-screws for fastening to any sized tub, a pair of gears for carrying the clothes over the edge of the tub or machine; compound wooden spring bars, to equalize the pressure of the rolls; a patent stop, to prevent the rolls from letting the coat out of gear—in short, everything which ingenuity can invent has been pressed into service to make the Universal a complete Wringer Machine. —*Moore's Rural New Yorker* of Sept. 9, 1871.