

already in progress. The braiding machines are peculiar in appearance and operation. The principle upon which they operate may be illustrated by the "ladies' chain" in a quadrille. A number of bobbins are fixed upon a horizontal circular platform. They are placed upon spindles, and by an ingenious mechanism are made to dance around each other and around the platform, at the same time whirling on their axes like nothing that we can conceive of but the figure in the quadrille alluded to. The threads are thus interwoven into beautiful and intricate textures.

In closing this article we wish to make some remarks upon what seem to us causes of failure in some attempts to manufacture silk in this country. We have already mentioned the difference in price of labor in Europe and America, and it will be seen that when labor is worth in France only one fifth as much as in the United States, and in England only one fourth as much, that without protection the Americans could not compete with them. The present tariff on pure manufactured silks is sixty per cent ad valorem; on mixed silks fifty per cent; on organzine thirty-five per cent, and on raw silk nothing. The conclusions from these facts are obvious; but there is another effect of protection that will not be so generally perceived. France and England manufacture for a foreign market; the United States manufacture for themselves. The French workman is forced to be content with his blouse and wooden sabots, the Englishman with his corduroys. This state of things is necessary that labor may be cheap. The system abroad depresses labor, our system elevates it. Here the producers are consumers also, and enjoy in large measure the comforts of the more affluent, including educational facilities which render them able to prepare their children for higher stations in life as such open to them. This is proved by the fact that in the city of New York at this time large numbers of wealthy and prominent men are the sons of hard-working and industrious mechanics, who have, by virtue of their talents and business energy, risen from the ranks, to honor and preferment.

A fruitful cause of failure has been in injudicious location. No one who has examined the subject can have failed to perceive that peculiar manufactures tend to centralization, and in all industries requiring such intelligence as is necessary to conduct the manufacture of silk, this is the natural law. Those who ignore it must eventually suffer from its violation. We might adduce instance upon instance to illustrate this point but it will not be necessary. The names of Lyons in France, Birmingham and Sheffield in England, will suggest many others to the minds of our readers. The attempt to distribute this growing branch of industry rather than to concentrate it around the nuclei already established, must in our opinion prove disastrous. Add to the protection offered by the Government, the mechanical genius of the American mind, and a recognition of the laws of industry, and the permanent establishment of the silk manufacture in this country will be placed beyond question.

LITERATURE FOR WORKINGMEN.

A Baltimore journal, devoted largely to a very light species of literature, puts forth a plea for the more extensive circulation of that class of reading among the working classes. This is quite natural. Interest is too often an obstacle to correct opinion. We were not, however, prepared to see such literature put at the head of all others, as being the precise thing that the masses need to supply their mental and moral necessities, as is done in the following quotation:

"The putting into the hands of the workingman imaginative literature is even a more important advantage than the cheapening of scientific books. The tendency of mechanical employments is to exercise the understanding alone; they afford no diet for the fancy or the feelings. They leave unfed no small portion of the intellect. They do not enlarge the world of observation or experience. They do not open any of the doors of history or biography. The artisan, like the student, requires the hours of leisure to stand in contrast with his daily employment. A few will find recreation even in severer studies, and will resort to it by a natural instinct; but we speak of the many who are used to be led rather than the few who can guide themselves. And, for the many, narrative, sometimes historical, but more frequently imaginative, holds out greater attractions than all the publications of the Useful Knowledge Society, or than all the excellent manuals of more recent date of mathematics, chemistry, or natural history."

The paper from which this is taken is a large and popular journal, and it is doing a great injury to the public by such false instruction.

It is a tissue of unfounded, and as such, uncalled for assertion from beginning to end. The tendency of mechanical employments is not alone to the exercise of the understanding. Granted that there are many occupations that require little of understanding or fancy, or anything else but elbow-grease (sawing wood for instance, which is a mechanical employment), we assert that there are no employments except the fine arts and authorship in which fancy has greater scope, and none whatever that call into more active play all the mental faculties than mechanical occupations. They do not leave the intellect unfed any more than other work, and if they did, we fail to see why imaginative literature is the proper food for famished minds.

Let us go down to the very root of this matter. All the useful arts are devoted to the supply of the wants of man. The first of these is air; that nature supplies. The second is food. Agriculture is then the first and most essential of all occupations, and as such it employs the largest number of individuals. Is there no scope for fancy and feeling here? Is all appreciation of the beauty of fruits and flowers, and billowy

meadows, and ripening grain, confined to poets, painters, and novelists? What say you, country lads and lasses?

After food, clothing. Is there no room for play of fancy here? From whence have originated the beautiful textures, the designs for jewelry, the general taste which pervades the civilized world for refinements of dress?

But perhaps we shall find the field narrowed when we come to dwellings? No. Architecture attained, long ago, the dignity of a fine art.

How is it about those who make the machines, the implements by the use of which mankind are fed, and clothed, and housed? Here we are on our own ground, and we know of what we speak. First, the motors. A steam engine, or a turbine wheel. Did ever Raphael paint, or Grecian sculptor carve a form of greater beauty than a first class steam engine? Talk of the poetry of motion. The motion of the steam engine, and its influence upon the progress of civilization, is a grander epic than ever yet was written. We grant you that a turbine wheel has more mathematics in its compact framework than artistic taste, yet even in this triumph of hydraulic science, we may find curves upon which the eye can pleasantly linger. Pass from the motors to the lathes, the planes, the spinning jennies, the looms, the steam fire-engines; the carriages, railway cars, steamboats, and all the other paraphernalia of civilized life, and then say if you will that fancy is excluded from the mechanic arts. Every artisan is insulted by such a statement, and still further insulted by the statement that his mind can digest only the light and trashy imaginative literature which forms the staple of the paper that thus puffs its wares.

We do not believe in the entire exclusion of all the lighter kinds of literature; but we denounce such willingness to pander to a depraved taste as is manifested in the quotation we have cited. The silly love stories or the wonder-exciting tales of bloodshed, and crime, and narrow escape, with a spice of ghost stories thrown in for a relish, which abounds in many publications,—the most vapid, most diluted broth of literature is something we protest against as mental pabulum for any class of people whatever, especially for those young and intelligent mechanics and apprentices who weekly read the SCIENTIFIC AMERICAN.

WEATHER PROPHECYING.

That science will yet ascertain a way of foretelling storms, we firmly believe. Indeed, the telegraph is even now usefully employed for this purpose, and its agency, we hope, will at some not distant date serve to warn our coast dwellers and coastwise crafts of an approaching storm in time to enable the one to prepare to assist the other. Since the publication of Prof. Espy's Theory of Storms, much attention has been devoted to this subject, and although a system which is entirely reliable and generally applicable, has not yet been perfected, it is to be hoped that the progress of scientific investigation will yet evolve such a system.

The weather prophecying, however, of experts, who calculate by the phases of the moon, by the comparison of one season with another, by cycles of storms, by the variations of the barometer, and the fluctuations of the thermometer, we deem of no value whatever. Nothing has ever yet been adduced to prove that the moon has any appreciable influence over the climate of this planet, or the temporary changes in the climate of localities. The comparison of former years with the present afford no criterion. The changes on the surface of the inhabited earth, by the destruction of forests and the multiplication of civilized habitations have much to do with alterations of climate. The theories of storm cycles are yet in embryo. Sudden fluctuations from causes beyond our knowledge are not taken into account by storm theorists; or if so, these fluctuations upset all their calculations, and they are left in the dark. The variations, neither of the barometer or the thermometer, are to be confided in. They are unreliable.

The astronomer, who from the top of his tower, or from a mountain summit; or the sailor, who has a more extended field of vision, may, from the appearance of the clouds and the condition of the atmosphere, prognosticate the advent of a storm and its direction. So, also, the farmer and the hunter, by long experience, necessitated by their pursuits, learn to read the heavens, or, rather, the atmosphere, to some benefit; but when our weather prophets presume to foretell a dry summer, a lean harvest, a cold winter, from their yearly observations, based only on observation, and not on a thorough knowledge of natural laws, we choose to place but little reliance on their prognostications.

Hardening the Moldboard of Plows.

A new method has been discovered for the manufacture of the moldboard of plows, which gives them all the hardness and temper of steel, in combination with the toughness of iron. The moldboard (good iron) is heated and dipped into molten iron. It remains there ten seconds, when the two surfaces become heated to a white heat, while the center is not heated through. It is then immediately dipped into water; the surfaces come out harder than the highest tempered steel, while the interior is still iron and retains all the toughness and strength of the iron. The advantages claimed for this invention is that the plows made by this process will take the finest and hardest polish, while they will be tough enough to endure any reasonable knocking about in stony soils.

We find the above in one of our exchanges. What is the new method? and where are such plows manufactured? We have had several inquiries about this matter.

A MAN in England recently made fifteen miles in one hour on a velocipede.

OFFICIAL REPORT OF PATENTS AND CLAIMS

Issued by the United States Patent Office.

FOR THE WEEK ENDING OCTOBER 13, 1868.

Reported Officially for the Scientific American.

PATENTS ARE GRANTED FOR SEVENTEEN YEARS, the following being a schedule of fees:—

Table with 2 columns: Fee description and Amount. Includes items like 'On filing each caveat', 'On filing each application for a Patent, except for a design', 'On issuing each original Patent', etc.

In addition to which there are some small revenue-stamp taxes. Residents of Canada and Nova Scotia pay \$500 on application.

Pamphlets containing the Patent Laws and full particulars of the mode of applying for Letters Patent, specifying name of model required, and much other information useful to Inventors, may be had gratis by addressing MUNN & CO., Publishers of the Scientific American, New York.

82,913.—EEL POT.—George D. Allen, New York city. I claim the eel pot funnel, of india rubber, and perforated substantially as above set forth.

8,914.—ALKALI CAN.—Christian Barry, Philadelphia, Pa. I claim an alkali can, in which clay is used for producing a tight joint, substantially in the manner described.

82,915.—CORN HUSKING PIN.—Elias Blair, Bucyrus, Ohio. I claim an instrument for husking corn, constructed substantially in the manner shown and described.

82,916.—TEN RACK.—Charles J. Bouche, Louisville, Ky. I claim a pen rack, composed of the sides, A B C D, connected by hinge joints, as shown, the hinge, roof, H I, brace, K, and racks, M, all constructed and arranged substantially as described, and provided with calendars, O P Q, and lips, S, for the reception of cards, substantially as set forth.

82,917.—CENTERING SQUARE.—George W. Brooks, Clinton, Mass. I claim, in combination with the square, the adjustable stop bar, b, when constructed as and for the purposes substantially as described.

82,918.—CORN PLANTER.—John A. Burchard, Beloit, Wis. I claim, 1st, Broadly, the employment of the dropping device, D, when constructed and arranged substantially as herein described and set forth, and used for the purpose of enabling the operator to know by ocular demonstration whether the machine is dropping the seed with certainty and accuracy.

82,919.—HOLLOW WINDOW CROSS BAR OF SHEET IRON.—T. A. Cambensy, Chicago, Ill. I claim, as a new article of manufacture, the hollow sheet metal window bars, constructed substantially as shown and described.

82,920.—BLIND HINGE.—Charles B. Clark, Buffalo, N. Y. I claim forming the cylindrical pintle, a, with the depress d slot, b, and the circular eye c, with outside casing, d, the whole combined and arranged as described, and operated in the manner and for the purposes specified.

82,921.—METALLIC COUNTER BRACE.—John L. Cooper, Preston, Conn., assignor to himself and Joshua E. Fellows. I claim the new article of manufacture of a spur socket, in combination with a counter brace, when made and applied substantially as herein described.

82,922.—OX YOKE.—William Cooper, Paris, Me. I claim the sliding slotted plate, a, held by staples, b, b', and adjusting nuts, c, c', and carrying the shaft fork, f, as and for the purpose set forth.

82,923.—HARROW.—Andrew J. Craig, Ashmore Station, Ill. I claim the bent teeth, A, A', pivot d together as described, so as to form a harrow with flexible sides, substantially as and for the purposes herein set forth.

82,924.—WASHING MACHINE.—C. H. Cramer, Rutland, N. Y. I claim the combination of the adjustable frame, B, and the treadle, f, for raising the same and the screws, H, for regulating its pressure, substantially in the manner and for the purposes described.

82,925.—HYDROCARBON BURNER.—Sutton Edward Crow, Stratford, England. Patented in England, June 14, 1867. I claim the arranging the apparatus in such manner that a jet or jets of steam, under pressure, or it may be of air, issues into the furnace in a direction parallel, or nearly parallel, to a pipe or passage by which combustible liquid is led into the furnace, such jet being immediately in rear and below the mouth of such pipe or passage, substantially as described.

82,926.—MORTISING MACHINE.—Franklin A. Deland, and Luke Phillips, Memphis, Mich. We claim, 1, The combination of the vertical guide, C', bed, C, slotted lever, D', and pin, E', substantially as and for the purposes herein set forth.

82,927.—ATTACHING ROSETTES TO HARNESS.—William L. Denio (assignor to himself and Irwin Davis), Rochester, N. Y. I claim the rosette, A, provided with the screw socket or nut, b, in combination with the screw loop, B, and attaching straps, g, h, the whole arranged as described, and operating in the manner and for the purpose specified.

82,928.—PIANOFORTE.—B. EDGE.—Charles H. De Vine, Buffalo, N. Y., assignor to De Vine Brothers. I claim the curved or edge, A, composed of veneers, a a', and b, having the ivory or equivalent top plate, F, attached, as herein described.

82,929.—APPARATUS FOR SETTING AXLES TO WAGONS.—David Ducharme, Mechanicsville, N. Y. I claim, 1st, The hook or jack, B, C, and the upright fulcrum or studs, E and E', in combination with the horizontal cross bar, F, each being constructed and operated substantially in the manner and for the purposes herein described and set forth.

82,930.—MOUNTING SPECTACLE AND EYE-GLASSES.—Charles N. Dunham, Philadelphia, Pa. I claim the glasses, A, A', having the pieces, B, B', D, D', cemented to them, as a new article of manufacture.

82,931.—CORE BAR FOR CASTING PIPES.—John Enright (assignor to himself, William Wall, and Thomas Enright), Louisville, Ky. I claim the collapsible pipe metal, rod or cylinder, having in one direction segments, A, so constructed and arranged as to be operated independently of each other, as herein shown and described.

82,932.—STUMP EXTRACTOR.—R. B. Ferris, Holland, Mich. We claim the combination of the lever, H, shackle, F, chain, I, rope, J, sheave blocks, 3, and 4, sills, A, p, st, B, tie beams, C, standards, D, pulley, E, and heliard, K, when constructed, arranged, and operating substantially as described and for the purposes set forth.

82,933.—ADJUSTABLE SQUARE AND BEVEL.—E. B. Foster and John G. Witt, Elmira, N. Y. I claim the combination with a try or T-square, of the wings, D, D', and the screw, F, for adjusting the angle of the same, substantially as described.

82,934.—PLOW.—Andrew Frisberg, Moine, Ill. I claim the plat, C, constructed and applied between the landside, A, and the handle, B, of a plow, substantially as described.

82,935.—RATCHET-AND-PAWL MECHANISM.—Joel Garfield, Groton, Mass. I claim in combination with a ratchet wheel and pawl arranged substantially as shown and described, the loose collar or disk, h, having an inclined slot into which the pawl pin projects, rotation of the pawl plate in one direction forcing the pawl up into engagement with the ratchet teeth, and its rotation in the opposite direction carrying it out of engagement therewith, substantially as set forth.

82,936.—STEAM ENGINE PISTON VALVE.—Richard Gornall, Baltimore, Md. I claim, 1st, The combination of the main valve, C, with the interior sliding valve, D, having tie flanges, e e, substantially as and for the purposes specified.

82,937.—RAILWAY FROG.—Josiah Gray, Chicago, Ill. I claim, 1st, The shield, H, constructed substantially as described, in combination with the point, C, and guard bars, B, as and for the purposes set forth.

82,938.—CULTIVATOR PLOW.—B. F. Guy and J. V. Guy, Macomb, Mich. We claim, 1st, In combination with plows thus hung in a frame, the spring bars and connecting chains or cords, as and for the purpose set forth.