

reed board, in melodeons, is that portion upon which the vibrating metallic tongues or reeds are placed. The reed board is slotted for each reed. The slots are all of different sizes, varying regularly with the sound to be produced.

This invention consists of a self-acting machine. It cuts the slots in the reed board at the proper distance apart, varies the length of the slots, and does the whole work with unerring precision. The improvement is applicable to various other kinds of slotted work. Mr. Carhart is the inventor of several highly ingenious and valuable improvements in machinery for manufacturing musical instruments. The firm of which he is a member, Messrs. Carhart & Needham, are extensive manufacturers of melodeons.

Novel Seed Planter.—By Geo. A. Meacham, of New York City.—This is a seed planting contrivance which is attached to the heel of one's boot, and is so arranged, that by the act of walking, the grain is dropped and planted in the ground. The seed is contained in a belt worn around the waist. A flexible tube conducts the seed down to the planting apparatus. Farmers may henceforth dispense with their cumbersome planting machinery. To plant their crops they will only need to slip on a pair of these magic boots, and leisurely stalk over the soil. Horses' feet may be supplied with shoes of the same sort, and the animals become thus converted into four-legged, self-moving, seed planters. Verily, the march of improvement is onward!

Improvement in Harness Pads.—By James Ives, of Mount Carmel, Conn.—Consists in a peculiar construction of hinge joint, whereby the journal of the pad can be confined in the bearings of the tree without the aid of a pin. This is a simple and utile contrivance.

Manufacture of Gutta Percha Tubes.—By James Reynolds, of New York City.—After the percha is cast into tubes, they require to be drawn over a mandrel and through a die, in order to equalize the thickness of the material, harden it, &c.

This invention consists in a bulb-headed mandrel employed in combination with a stationary die of peculiar form. It also consists in certain means of providing for the convenient and speedy introduction of the mandrel to a long piece of tubing, and the ready introduction of the tubing to the die.

Hub Clamp.—By A. S. Macomber, of Bennington, Vt.—Consists in clamping the hub during the tenoning operation, upon a suitable bed, by means of jaws attached by pivots to bars. One of these bars is adjustable. The jaws are operated by means of worm wheels, screws, and connecting rods, arranged so that the hub may be quickly clamped and again released, at pleasure.

Improved Rotary Pump.—By John Broughton, of Chicago, Ill.—The distinguishing characteristic of this pump is, that it is composed of a solid eccentric piston fitted within a barrel, which barrel has an oscillating movement derived from the rotary movement of the piston. The piston, by its rotation, combined with the oscillation of the barrel, is caused to move reciprocally towards and from each end of the barrel, and thereby, without the aid of valves, alternately to form a vacuum to draw water through a suitable inlet, and force it out again through a suitable outlet.

New Tool for Watchmakers and others.—By William Hart, of Mayville, Wis.—This is a neat and curious combination tool, so formed that when arranged in one position it may be used as a hand vise, in another, as a pair of callipers, and in another, as pair of pliers.

Blind Opener.—By Hiram Collins, of Salisbury, Mass.—his is a contrivance for opening and closing window blinds from the inside of an apartment, without raising the window. On the window frame, within, there is an ornamental knob, by turning which, in one direction, the blind opens, and in the other, it closes. Nothing can be more convenient. The operation is effected by means of a rod, which extends from the knob in a downward oblique direction, through the frame to the blind; the end of the rod is here bent up into a hook shape and enters the blind. This is a very simple and effective invention for the purpose.

Novel Improvement in Pocket Books.—By J. O. Dickinson and Robert Bate, of Hudson,

Mich.—Consists in attaching a number of small sharp hooks to the outside of the pocket book, so that if a rogue attempts to steal the purse the hooks will catch in the cloth and defeat the trick. Genius has, in all ages, proved herself superior to villainy. This example of her supremacy is the very latest.

Improvement in the Manufacture of Gutta Percha.—By James Reynolds, of New York City.—This invention is for covering telegraph wires with gutta percha, making ropes, &c. It is a rotary force pump of peculiar construction, so arranged as to draw in the gutta percha when heated to a liquid state, and then force it out through suitable dies. The machine operates with a uniform forcing movement, and is so arranged that it cannot become clogged up with the percha.

Head Block for Saw Mills.—By J. Kurtzman, of Lancaster, O.—Consists in operating the dogs and head block from one and the same shaft, by means of gearing arranged so that the head block may be adjusted to set the log properly to the saw, and the dogs also adjusted at the same time, the parts being all self-acting.

Improvement in Car Wheels.—By Wm. R. Thomson, of Cleveland, Ohio.—The inner ends of the spokes, where they meet together in the center, are enlarged or clubbed, so as to form a hub; they are also made to dovetail firmly together. Thus arranged, they are placed in the fire, heated, and firmly welded at the center. Great strength and solidity is thus obtained.

Shingle Machine.—By Jason Palmiter, of Jamestown, N. Y.—In this improvement there is a large wheel, the surface of which is angular or polygonal in form. The blocks of wood, from which the shingles are to be cut, are fastened to carriages on these polygonal surfaces, and revolve with the large wheel. The blocks, as they revolve, are carried against a circular saw, which cuts off the shingles. There is a self-acting arrangement for feeding the blocks.

Potato Digger.—By Amos L. Grinnell and John Z. Williams, of Willet, Wis.—Consists of a series of iron prongs or forks pivoted together like a pair of scissors or oyster rakes. The prongs are open when thrust into the ground, but in the act of pulling them out, their lower ends come together, and the potatoes are thus lifted from the hill.

Implement for Drawing the Teeth of Circular Saws.—By M. L. Parry, of Galveston, Tex.—Consists in having an adjustable stop or mandrel fitted in the upper part of an adjustable arm. Said arm is attached to the frame in which the saw arbor is fitted, and so arranged that the stop or mandrel may be introduced between the teeth of the saw, so as to form a rest or anvil on which to hammer the saw.

Improvement in Harvesters.—By J. C. Pluche and L. C. Pluche, of Cape Vincent, N. Y.—Consists in dove-tailing the teeth to the sickle bar, so as to give additional strength. The back ends of the teeth are furnished with cleets, and the sickle bar is grooved to receive said cleets. The cleets and groove are made in dove-tail form. Thus the teeth are firmly secured to the sickle bar, and may be readily attached or detached for sharpening or repair.

Seed Planter.—By C. O. Luce, of Freeport, Ill.—The seed is sown by centrifugal action. It is introduced into the center of wheelshaving hollow arms, like a turbine water wheel. The improvements consists in the employment of valves placed in the conveying tubes, and used in connection with the distributing wheels whereby the discharge of grain during the planting operation may be accurately regulated.

Recent Foreign Inventions.

Hardening the Surface of Porous Stones.—W. A. Gilbee, of Paris, has secured a patent for impregnating porous stone with a silicate of potash, which, when dried, renders the stones hard and of a glassy surface. The solution is first applied at a strength of 7 degs. Baume's hydrometer—and finished with liquor of 12°. Care is taken not to stop up the pores of the stone suddenly; therefore, for some stones, the solution is applied at first by sprinkling, then finished by steeping the stones for a few hours in a tank containing the liquor.

After being saturated, the stones are dried in an oven heated up to 300° Fah. The stones are also heated and thoroughly dried before being operated upon. The silicate of potash is formed by dissolving pure white sand in a strong potash lye—it is soluble glass.

Machine for Blacking Boots.—F. Ayckbourn, of London, has invented a machine for the foregoing named purpose. It is made of a framework of wood, with concave brushes on spindles surrounding a step on which the boot is placed. A trough containing blacking is set beside each brush to supply it, but which are moved out of reach by touching a rod when sufficient blacking is put on. The brushes are made to do their work of blacking and polishing, by simply turning a crank handle, by a person while standing. He has but to place his booted foot on a step and turn a crank, and by a few whirlabouts, his boot from a muddy brown hue, will be developed into a black shining mirror.

Winding Silk from Cocoons.—R. A. Brooman, (Editor of the London *Mechanics Magazine*), has taken out a patent for some foreign inventor, for winding silk freely off cocoons, which appears to be a good improvement. A neutralizing agent to the stickiness of the silk, is applied, which permits the various fibers to be easily wound upon bobbins, by removing their adhesiveness. This agent consists of alcohol, or glycerine, water, or oil mixed with ox gall. It is applied in the water in which the cocoons are generally placed for winding, or in any othersuitable manner.

Hoof and Horn Dust for Manure.—William A. V. Macduff, of Scotland, dries horns and hoofs slowly, until they are brittle, in a heated or close chamber, and then grinds them into dust between rollers, or between stones, and uses the product for manure, either alone or mixed with bone dust. This manure is rich in nitrogenized matter, but it cannot be produced cheap. Macduff has obtained a patent for a manure for which which it will be very difficult to find material enough.

New Construction of the Cornish Pumping Engine.—Cornish mine owners, by rewards and premiums, have brought out those improvements which have given the Cornish Engine its high character for economy in the consumption of coal; and yet there are one or two evils connected with its operations, which, up to the present time, have never been surmounted, and continually involve great expense. The steam in the Cornish engine simply raises a heavy plunger, which then descends by its own gravity, (single strokes,) and with a terrible velocity when the stroke is long. Appliances are therefore necessary to obviate the evils of great concussions, and besides, the engine has to be set on a mass of solid masonry of a considerable height in order to withstand the shocks.

W. Fairbairn, of Manchester, Eng., has recently introduced a new engine for pumping purposes, which, from an entirely novel form of construction of some of the arrangements, thoroughly obviates the expense of high buildings and massive masonry. In place of the single working beam above the cylinder, there are two placed below, one on each side the engine, resting on a platform level with the ground, and in some instances below the mouth of the pit. In case the engine should miss a stroke through an accident in the pit, the shock is received upon a massive oak transverse spring beam, which passes under the cylinder, and rests upon the foundations of the engine house on each side. A corresponding spring beam is fixed in the pit, to receive the fall of the pump rods, whenever they happen to pass beyond the limits of the stroke in their descent. This modification in the arrangement has the advantage of making the foundations sustain the weight and shocks of the engine direct, and causes a great saving in the original cost. The principle of the engine itself presents no material difference from those of ordinary construction, and the arrangement is compact, simple, and effective; it is worked by double beat valves, and is so arranged as to cut off the steam at any part of the stroke.

Photography under Water.—In the *Journal of the Society of Arts*, W. Thompson, of Weymouth, Eng., gives an account of the means

he adopted for taking a photograph of the bottom of the sea, in Weymouth Bay, at a depth of three fathoms. It appears that the camera was placed in a box, with a plate-glass front, and a movable shutter to be drawn up when the camera was sunk to the bottom. The camera being focussed in this box on land for objects in the foreground, at about ten yards or other suitable distance, was let down from a boat to the bottom of the sea, carrying with it the collodion plate, prepared in the ordinary way. When at the bottom the shutter of the box was raised, and the plate was thus exposed for about ten minutes. The box was then drawn into the boat, and the image developed in the usual manner. A view was thus taken of the rocks and weeds lying at the bottom of the bay. Mr. Thompson anticipates that it will be a ready and inexpensive means of arriving at a knowledge of the condition of piers, bridges, piles, structures, and rocks under water.

The Prejudices of Tradesmen.

A very common opinion, existing among all classes of tradesmen, is, that a person not practically acquainted with any certain branch of mechanical art, is incapable of improving it. Such opinions have been the means of fixing trade prejudices in the minds of practical mechanics not at all times creditable to their general intelligence and good sense. Thus, while lately reading some accounts of the transactions of the old "Society of Mechanics and Tradesmen," in this city, the very discreditable record is left to make posterity sneer at the exclusiveness of its ancient members, viz., that Robert Fulton applied to be admitted a member and was *refused*, because he was not a practical mechanic. We believe this prejudice is not so exclusive, as it was in bygone years, and it is becoming less so every year. So many excellent improvements have lately been made by persons not practically engaged in the trades to which their inventions related, that they have extorted general admiration as real practical men, by the practical usefulness of their improvements.

In conversation, recently, with a very ingenious and intelligent molder, respecting some very desirable improvements required in his trade, he stated that in all likelihood, they would be invented by persons not practically engaged in the trade, and the reason he gave for this opinion was a very good one. "Those engaged in the trade," he said, "being educated to certain methods of operating, were less likely to devise entirely original improvements." This opinion, however, cannot be taken as a rule, but such results have occurred many times to our knowledge. In what we have said, we wish to inculcate the lesson, that trade prejudices, oftentimes, do injury to very worthy men, and should therefore be eschewed. Robert Fulton was an amateur artist, but he could sketch and devise machinery, and he had original qualities of mind, without which the mere mechanical skill of hand, would never advance science or art a single step; and yet he was refused to be recognized as a practical mechanic by a New York Association, although he laid the foundation of that mechanic art for which New York is more distinguished than any other, namely, constructing steamboats.

To Take Ink Stains out of Linen.

There are various chemicals, capable of extracting ink stains from linen, but the most simple and convenient, when the stain is comparatively fresh, is the juice of lemons, applied to the spots, then washed out with warm water. Some use common salt with the lemon juice, but this is of no use unless the salt is decomposed by the citric acid of the lemon uniting with the soda of the salt, thereby setting its chlorine free, which is a most powerful bleaching agent.

Lemon juice was long used (and is by some yet) by straw hat bleachers, for removing iron stains from leghorn hats, but oxalic acid has nearly superseded it. The latter is much superior but is dangerous to keep in families where there are children, as it is a poison. Muriatic acid (old spirit of salt) is a more powerful extractor of ink stains than either citric or oxalic acids, but it is unsafe in the hands of others than experts.