in such repute as in the United States of America. The laboring classes may be said to embrace the entire American nation. The American prefers the occupations in which the exercise of the brain is in greater demand than that of the elbow. His chief ambition is to attain to the position of a master workman."

## THIRTY-NINTH INDUSTRIAL EXHIBITION OF THE AMERICAN INSTITUTE.

The Board of Managers of this association have issued circulars announcing their thirty-ninth exhibition, which will be held at the Empire Skating Rink, on the Third avenue, between Sixty-third and Sixty-fourth streets. The premises, lately enlarged and improved, will be opened for the reception of goods on Monday, August 29th, 1870, and on Wednesday, September 7th, the Grand Exhibition will be formally opened to the public by an address at 12 o'clock, M. It will remain open every secular day from 9 A. M. to 10 P. M., until Wednesday evening, November 2, 1870, when the closing address will be delivered, and awards to successful competitors announced.

Circulars containing full information may be had on application to the "Corresponding Secretary of the American Institute, New York," who will also send blanks and give any desired information to parties desiring to become exhibitors, and will receive and file all applications for space.

## CINCINNATI INDUSTRIAL EXHIBITION.

This exposition will be held under the joint auspices of the Chamber of Commerce and the Board of Trade of the city of Cincinnati, and the Ohio Mechanics' Institute, commencing Wednesday, September 21, 1870.

It is the expressed desire of the managers to make this exposition of art and industry superior in point of attraction and practical benefit to all concerned, to any display of a similar nature which has ever been held in that city.

They hope to see art and mechanism fully represented. Steam power for driving machinery will be furnished. Any desired information will be obtained by addressing the " Secretary of the Cincinnati Industrial Exposition," who will furnish rules and blank applications for space.

## NEW MECHANICAL MOVEMENTS.

On page 192, present volume, we gave the following prob lems for solution :

"PROBLEM 1.—Required to convert the rotary motion of a pulley into a horizontal intermittent rectilinear motion, first in one direction and then in the opposite direction, without the use of a pitman, pulley, toothed wheel, cam, cam groove in a pulley, or a flexible band, the first rotary motion to be constant and uniform. In other words, let it be required to move a piece of metal, wood, or other material, to a certain point where it shall pause, and then again move on a certain distance and again pause, and so on successively as far as desired, when it shall return to the point from which it originally started in the same intermittent manner and under the conditions above specified.

"PROBLEM 2.-Required to produce a variable rotary motion in a shaft driven directly by a belt from a pulley having a uniform constant rotary motion, without the use of anything but the one belt and the two pulleys; no cone pulleys or their equivalent to be allowed. All the motions to be con tinuous and in the same direction.

" PROBLEM 3.-From a reciprocating body to communicate reciprocation to another body, so that the second shall make four reciprocating movements for every reciprocation of the first; the motions of these bodies to be in lines parallel to each other, and the pieces to be connected by only three moving parts, which parts shall be neither wheels nor pulleys of any kind, and no inclined planes, cams, belts, or flexible cords, cranks or bell cranks to be allowed, and no radial motion from a fixed center in any piece employed."

We are happy to announce that each of these problems has received a correct solution, and we have engraved some which could hardly be understood by a mere verbal description.

Problem 1 seems to have received the greatest share of attention, and we have received a number of solutions which do not comply with the enunciation of the problem. One of these is, however, sufficiently ingenious to be noticed, notwithstanding it is an

## IMPERFECT SOLUTION.

" An eccentric pulley is allowed in the solution of Problem

## TRUE SOLUTION OF PROBLEM 1.

"A, Fig. 2, represents the piece that has the intermittent, rectilinear motion, sliding with the rod, H. B is the shaft having the constant uniform rotary motion, and carries with



it the wiper, C; this successively engaging with the pins, D, E, F, G, imparts the motion required, the number of intermissions being varied with the number of pins. I have made a model of this movement, and it works in all respects as described. WM. M. MOORE."

Niles, Mich.

SECOND SOLUTION OF PROBLEM 1. "The wheel, A, Fig. 3, is the given pulley, having a uniform rotary motion. R, R, represent rubber pieces fastened upon



one half of its perimeter, the action of which upon the yoke, B, will produce the intermittent reciprocating motion required COURTNEY HEATH." Toledo, Ohio.

#### THIRD SOLUTION OF PROBLEM 1.

"The following is another form of movement, which I believe to be a true solution of problem 1. The given pulley, A, Fig. 4, carries a wrist, R, which works in the slotted yoke



B. The end of the arm, B, carries a double pawl, D, which works in the rack, C. E, E, are stops for removing the pawl, D. IBID."

#### PROBLEM 2.

Several solutions have already been "published for this problem, see page 287. E.A. T. of Philadelphia, Pa., sends still another, which we are inclined to think is not new, but will nevertheless give it. It is simply two eccentric pulleys of equal.throws, connected by an inelastic belt.

#### PROBLEM 3.

But one solution for this problem has been received that can be accepted as new, and also as correct. The author of the movement, shown in Fig. 1, favored us with one, but it has a radial movement from a fixed center in one of the pieces, which is not allowed in the specified conditions.

#### TRUE SOLUTION OF PROBLEM 3.

The bar, C, Fig. 5. is the body required to make four reciprocations, while the bar, A, makes one. Move the bar, A,



value of the manufactured crop in North Carolina would exceed this sum.

## PATENT OFFICE AFFAIRS.

The business of the Patent Office is now in a flourishing condition, and the present is a favorable time to enter applications. Inventors will find the SCIENTIFIC AMERICAN PATENT AGENCY ready to attend to the prosecution of claims with the greatest dispatch. By reference to our register, we find that we have made upwards of twenty-four thousand preliminary examinations into the novelty of alleged new inventions. This great experience, together with the fact that a large proportion of all the business with the Patent Office, for the past twenty years, has been conducted through this Agency, suggests to inventors the surest and best means to ecure their rights.

We give opinions free, and all we require is a rough sketch and description of the invention.

Inventions patented through this Agency receive notice in the SCIENTIFIC AMERICAN.

MODELS .- In order to apply for a patent the law requires that a model shall be furnished, not over a foot in any of its dimensions, neatly and substantially made. Send the model by express, prepaid, addressed to Munn & Co., 37 Park Row-New York, together with a description of the operation and merits of the invention.

CAVEATS.-Whenever an inventor is engaged in working out a new improvement, and is fearful that some other party may anticipate him in applying for a patent, it is desirable, uuder such circumstances, to file a caveat, which is good for one year, and, during that time, will operate to prevent the issue of a patent to other parties for the same invention. The nature of a caveat is fully explained in our pamphlet, which we mail free of charge.

EUROPEAN PATENTS .- Probably three-fourths of all the patents taken by American citizens in Europe have been secured through the SCIENTIFIC AMERICAN PATENT AGENCY. Inventors should be careful to put their cases in the hands of responsible agents, as in England, for example, the first introducer can take the patent, and the rightful inventor has no remedy. We have recently issued a new edition of our Synopsis of European Patent Laws.

All communications and inquiries addressed to Munn & Co., respecting patent business, are considered as strictly confidential.

## Death of Mr. Dickens.

As we go to press the telegraph brings us news of the death of the great novelist, Charles Dickens, than whom no writer of his time has become more widely known and admired. The writings of Mr. Dickens have all been in the interest of humanity, and no more fitting epitaph could be engraved upon his tomb than

"Write me as one that loved his fellow man."

His death will be lamented by the intellectual and the good of both hemispheres.

AN express train on the Alleghany Valley Railroad, running at the rate of forty miles an hour, was lately brought up all standing against an obstruction on the track, consisting of rocks and dirt, the result of a land-slide. This train was fitted with Miller's platforms, buffers, and couplers. Notwithstanding the fearful velocity of the train no lives were lost, as the cars did not telescope, as ordinary fastened cars would have done under the same circumstances. Miller's inventions should be adopted on all railroads without delay. On the Missouri Pacific Railroad nineteen passengers were I stely killed by the telescoping of the cars.

HARD ON THE M.D.'s.-Dr. Charles Elam has lately written a work in which he undertakes to prove, and asserts he does prove, that the practice of medicine of to-day is less efficient, performs fewer cures, and is less able to check disease than it was thirty years ago.

2,



fore use one, A, in solution of Problem 1. Yoke this eccentric pulley to a rod. B. in the usual manner ; on this rod is the simple double pawl, C, which engages in the notches, a, a, a, a, etc., and gives horizontal, intermittent, rectilinear motion in one direction as above. At the next stroke of the eccentric, a pin at D may trip the pawl, and we will then have horizontal intermittent motion in the other direction, until another pin, say at E, again reverses the motion. Salem, N. C. J. W. FRIES."

We consider this solution faulty because the eccentric may be regarded as the equivalent of a crank in this instance, and if so regarded, the rod, B, is the equivalent of a pitman. The latter is not allowed by the conditions of the problem.

up to the point x, and the bars, B and E, will take the position shown by the broken lines on the right. The bar, C, will have made one whole reciprocation. Continue the motion of A to the position shown by the broken lines on the left; C will then have made two reciprocations. Move A back to its original position, and C will have made four reciprocations, while A has made but oue. This beautiful link motion is the invention of the author of the movement shown in Figs. 3 and 4.

### Sweet Potato Experiments.

The Western Rural states that Colonel Baylor, of Georgia, aided by some scientific gentlemen in Boston, has been for some time conducting a series of experiments upon the sweet potato. The articles produced are starch, dextrine sugar powder, a sweet kind of vegetable flour. It is said that there is a variety of sweet potato cultivated in the Southern States which will yield ten per cent of cane sugar.

It is estimated that the sweet potato crop of Georgia, properly manufactured for commercial purposes, would add from \$10,000,000 to \$15,000,000 to the wealth of that State. The

#### Inventions Patented in England by Americans.

[Compiled from the " Journal of the Commissioners of Patents."]

### PROVISIONAL PROTECTION FOR SIX MONTHS.

1.237 .- SUPPORTING AND GUIDING APPARATUS FOR MACHINES FOR SEW-ING BOOTS AND SHORS .- Daniel Mills, New York city. April 30, 1870.

1,255.-BUCKLES OR BALE TIES.-E. J. Beard, St. Louis, Mo. May 2, 1870.

1257.-HOISTING MACHINE.-Renry Reedy, Cincinnati, Ohio. May 2 1870.

1,261.-MACHINERY FOR PRINTING UPON SPOOLS FOR THREAD, ETC.-IRS Dimock, Florence, Mass. May 3, 1870. 1.286.-STEAM ENGINES.-Babcock and Wilcox, Providence, R. I. May 5, 1870.

1.824.-MACHINERY FOR KNITTING LOOPED FABRICS.-John Pepper, Lake Village, N. H. May 9, 1870.

1,215.-APPARATUS FOR ABSORBING THE OVMRFLOW OF OIL IN HYDRO CARBON AND OTHER LAMPS.-L. E. C. Moore and J. S. Hamilton, Pittston Pa. April 27, 1870.

1,289.-SAFES, ETC.-T. Hyatt, New York city. May 5, 1870.

1,313.-STAMP.-Towle and Harding, New York city. May 7, 1870. 1,323.-NUT LOCK.-R. Rutter, Vallejo, Solano county, Cal. May9, 1870.

1,335.—ILLUMINATING GAS APPARATUS.—M. H. Strong, T. Barboar, and C. Conner, New York city. May 10, 1870.

1,386.-BREWING ALE AND OTHER MALT LIQUORS.-James MCC Boston, Mass. May 10, 1870.

1,351.-MACHINERT FOR POINTING AND FINISHING NAILS.-Sebastian Schlesinger, Boston, Mass. May 11, 1870. 1.358.-GRATE BARS.-JONATHAN CONE, Bristol, Pa., and John McEldery, Jersey City, N. J. May 12, 1870.

3,610.-PROJECTILES.-A. F. Potter, San Francisco, Cal. May 12, 1870. 1,345.-PADDLE WHEELS.-W. F. Knowlton and M. McComb, St. Cloud, Minn. May 11, 1870.

#### Universal Clothes Wringer.

But one invention has held its own in the household, and that is the Clothes Wringer. We have used one of those whose name heads this article, for ten years, and it has done good service during that time, although in weekly use. We consider the fact, that the frame and all parts of the machine are made of wood, to be in its favor. There can be no possibility of injury to the clothes by rust. Another advantge of this Wringer, is that of a patent stop, in the form of a screw, placed over the wheels, preventing them from getting out of gear. But the principal advantage of this wringer over others, is the patent double gear. This is the invention of the late Dr. Warren Rowell, and one of the best devices in mechanical movements that has come under our observation for a long time.-[N. Y. Mechanic Dec. 1, 1869.

#### Business and Personal.

The Charge for Insertion under this head is One Dollar a Line. If the Notices exceed Four Lines. One Dollar and a Half per line will be charged.

The paper that meets the eye of manufacturers throughout the United States-Boston Bulletin, \$4'00 a year. Advertisements 17c. a line.

- Glass Cutters' Grindstones, made by machinery-Craigleith, 40c.; Newcastle and Nova Scotia, 8c. an inch. J. E. Mitchell, 310 York avenue, Philadelphia.
- Catlin's Patent Self-closing Barrel Filler for filling packages with liquids of any kind. See other advertisement, and address, for circular, S. C. Catlin, Cleveland, Ohio.
- Keane's Silver-plating Compound plates metals with pure silvcr instantaneously. Kcane, Silver Plater, 75 Bleecker st., New York.
- Rawhide Sash Cord has no equal for heavy windows or dumbwaiters. Makes the very best round belting. Darrow M'f'g Co., Bristol, Ct."
- Crampton's Imperial Laundry Soap, washes in hard or salt water, removes paint, tar, and grease spots, and, containing a large percentage of vegetable oil, is as agreeable as Castile soap for washing hands. Grocers keep it." Office 84 Front st., New York.
- Peck's patent drop press. For circulars, address the sole manufacturers, Milo Peck & Co., New Haven, Ct.
- Millstone Dressing Diamond Machine-Simple, effective, durable. For description of the above see Scientific American, Nov. 27th 1869. Also, Glazier's Diamonds. John Dickinson, 64 Nassau st., N. Y.
- For Fourneyron and Jonval Turbine Water Wheels, Mill-work Shafting, Pulleys and Hangers, apply to J. Cornell & Co., Sandy Hill, N.Y.
- Machinists and others using Fine Tools, send for illustrated catalogue. Goodnow & Wightman, 23 Cornhill, Boston.
- Scientific American.-Back Nos., Vols., and Sets for sale. Address Theo. Tusch, City Agent, 37 Park Row, New York.
- Pictures for the Sitting Room .- Prang's latest Chromos," Flowers of Hope," and "Flowers of Memory." Sold in all Art and Book Stores throughout the world.
- Tempered Steel Spiral Springs for machinists and manufacturers. John Chatillon, 91 and 98 Cliff st., New York.

Shop, Town, County, or State Rights for sale, for Patent Coal Scuttle. For circular, etc., address T. T. Markland, Jr., 1515 South st., Philadelphia, Pa.

- Galvanized iron ventilating skylights, straight and curved extension lights, conservatories, etc., under patents dated 1869-70, are approved by every architect. For Rights address Geo. Hayes, 758th ave., New York.
- Grindstones made by machinery, perfectly true, at reduced prices. Send %oz. sample of grit wanted, by mail.J. E. Mitchell, 310 York avenue, Philadelphia.
- L. L. Smith, 6 Howard st., N. Y., Nickel Plater. First Premium awarded at the late Fair of the American Institute. Licenses granted by the United Co., 17 Warren st., New York.
- One 60-Horse Locomotive Boiler, used 5 mos., \$1,200. Ma chinery from two 500-tun propellers, and two Martin boilers very low. Wm. D. Andrews & Bro., 414 Water st., New York.
- Kidder's Pastilles.—A sure relief for Asthma. Price 40 cents by mail. Stowell & Co., Charlestown, Mass
- Pat. paper for buildings, inside & out, C. J. Fay, Camden, N. J.
- Stiff, heavy, powerful lathes, planers, shapers, slotters, and radial drills, in stock. E. & A. Beits, Wilmington, Del.
- Second-hand donkey pumps, 12, 25, and 35-H. engines, leather hose, old style blowers, cocks, valves, etc., etc., Wm, D, Andrews & Bro., 414 Water st., New York.
- Kitchen Grindstones, for sharpening table knives, Loring's pat., best article out. J. E. Mitchell, Agent, 310 York avenue, Philadelphia.
- An experienced mechanical and railway engineer wishes a position as Master of Machinery, or Manager. Address " Engineer," Station "G," Philadelphia, Pa., Postoffice.
- For solid wrought-iron beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa., for lithograph, etc.
- Keuffel & Esser,71 Nassau st., N.Y., the best place to get 1st-class Drawing Materials, Swiss Instruments, and Rubber Triangles and Curves.

Notice to the Purchasers and Manufacturers of Ice

As the holder of Letters Patent from the United States, under date April 12, 1870, I hereby caution all parties manufacturing or purchasing Ice Machines, operated with Chimogene, against infringements of said Letters Patent. This public caution is specially intended for the notice of the Arctic Ice and Refrigerating Company, of the City of New York.and of parties who may contemplate the purchase from them of the Ice Machine at present manufactured by them, which clearly infringes my Letters Patent.

Machines.

D. L. HOLDEN, P. O. Box 6049, New York city.

## Answers to Correspondents.

CORRESPONDENTS who expect to receive answers to their letters must, in all cases, sign their names. We have a r ght to know those who seek in-formation from us; besides, as sometimes happens, we may prefer to ad-dress correspondents by mail.

SPECIAL NOTE.—This column is designed for the general interest and in-struction of our readers, not for graining repi es to quest ons of a purely business or personal nature. We will publish such inquiries, however, when paid for as advertisemets at \$1.00 a line, under the head of "Busi-ness and Personal." All reference to back numbers should be by volume and page.

R. R. S., of Va., and others.-We are receiving many inquiries upon the subject of cement for aquariums, not containing lead. Can anybody give us a good recipe of this kind? The following is highly recommended by a correspondent of the Boston Journal of Chemistry, but it contains the objectionable substance. Take 10 parts by measure of litharge, 10 parts of plaster of Paris, 10 parts of dry white sand, 1 part of finely powdered resin, and mix them, when wanted for use, into a pretty stiff putty with boiled linseed oil. This will stick to wood, stone, metal, or glass, and hardens under water. It is also good for marine aquaria as it resists the action of salt water. It is better not to use the tank until three days after it has been made.

C. A. L., of Tenn., finds that his bolting cloths (No. 9) recently clog on all occasions, with good wheat flour properly ground on best French burrs. The cloths have been in use about twelve months. He wishes to ascertain, if possible, a way to prevent this. He says he has to stop and brush them off very often, and attributes the mischief (we think correctly) to having ground a very damp lot of wheat, which he thinks served a regular apprenticeship at the business, but knows of no way to remedy the evil complained of. If any of our correspondents can prescribe a remedy, we shall be glad to hear from them.

C. D. C., of W. Va.—There are various proportions for speculum metal for reflecting telescopes. We give you four. First: copper 64 parts, pure tin, 29 parts; melt separately with the use of black flux, and mix. Second: copper, 2 parts, r ure tin, 1 part; mix as before. Third: copper, 64, tin 29 to 33 parts. Fourth: according to Lord Rosse, the constructor of the great reflecting telescope which bears his name, the best proportions are, copper, 1,264 parts, tin, 589 parts. Sometimes a little arsenic is added to increase the whiteness of the alloy. These alloys are very difficult to manipulate, as they are likely to crack in cooling.

W. A. B., of Mass.-We do not believe mere age hardens stereotype metal. We think it probable, however, that plates which have been used in the press for some time would be somewhat more dense and hard than those fresh from the mold. In the cold state, and remaining at rest, all the change that could occur would, in our opinion, be a slight oxidation of the surface. It is barely possible, however, that a slow crystallization may go on in such metal, under favoring circumstances, analogous to that which is known to take place in other metals; but we do not think this very probable.

D. D. S., of Ill.-You may bleach beeswax by exposing it for a sufficient time to the action of the air and light after cutting it into thin shavings. A quicker way is to melt the wax and add for each pound two ounces of nitrate of soda, and one ounce of sulphuric acid diluted with nine parts of water. The latter should be added very slowly, while the melted wax is constantly stirred with a glass rod. It is then cooled and set aside after filling the vessel with boiling water. Washing the wax with boiling water until no trace of the acid remains completes the process.

W. R. B., of Va.-The combustion of a lamp may be kept up in a close vessel by forcing oxygen into the vessel, and the carbonic acid gas, expanded by heat, might be used as motive power. There would, however, be serious practical difficulties in applying this principle to the propulsion of machinery. This correspondent writes that the mountains about Waynesboro, Va., abound in the black oxide of manganese

D. R., of N. B.-It is not good practice to make the induction pipe to a steam cylinder too large, as you thereby increase the area of radiating surface. We therefore answer that it is not just as well to make these pipes larger than necessary. Such kind of loose practice in anything relating to steam is intolerable at the present day, when the whole subject is reduced to a science.

C. L. P., of La.-We believe the best paper-hangers' paste, as well as a paste for general purposes, is simply wheat or ryc flour beaten whto cold water to perfect smoothness, and the whole just brought to a boil, while being constantly stirred to prevent burning. A little creosote, or carbolic acid, will make it keep much better. Any addition to this paste fails to improve it.

- White Brass.—We are in receipt of numerous inquiries as to where the white brassdescribed on page 343, current volume, can be obtained. Parties interested in its sale would do well to advertise it. We cannot answer these inquiries, as we know of no one in this country or in Europe who sells the article. We gave in the article referred to all the information we are in possession of in regard to it.
- W. S. H., of N. Y.-One hundred and thirty revolutions per minute is a very low speed for a steam engine with cylinders of nine inches diameter and twelve inch stroke. If properly constructed in all respects, no economy would result from the reduction of spead, Reduction of the speed would reduce the power of the engine.

# Recent American and Loreign gatents.

Under this heading we shall publish weekly notes of some of the more prom inent home and foreign patents.

WOOD PAVEMENT .- John W. Brocklebank, New York city, and G. W. Tubbs, Elizabeth, N. J.-This invention relates to improvements in wood pavements of that kind wherein blocks arranged vertically in rows across the road bed, either with or without spaces between, to be filled with gravel, etc., are placed upon a superstructure intermediate between the graded road bed and the blocks, and it consists in an arrangement of the said blocks on a foundation of sills laid across the roadbed parallel with each other, on the graded surface, with spaces between filled with sharp sand, the said spaces being as wide as the thickness of the blocks which are set upon the sand ; and they are supported at the edges, which are placed together in forming the continuous row, by short joists laid across the sills, the corners of the blocks being recessed for the purpose, each joist supporting two blocks.

MOWERS AND REAPERS .- Wm. Michael, Murrysville, Penn.-This invention relates to improvements in the driving mechanism for mowers and reapers, and consists, in an arrangement of the driving wheels on short, independent axles, concealed by adjusting screw caps, and gearing them with loose pinions on a counter shaft, having spring ratchet clutches, communicating the motion from both driving wheels together, or one in-dependently of the other when moving in curved lines, so that one driving wheel goes faster than the other, the said clutches being held in gear by springs which allow them to slip out when the machine is backed.

PAPER BOXES .- John Root, New Haven, Conn.-This invention relates to improvement in securing the parts of paper boxes together where they lap each other, and consists in fastening them by metal clasps consisting of strips of thin sheet metal bent over the edges, and pressed together as to clamp the parts between them.

SHADES FOR GAS LIGHT .- Wm. Fullager, Brooklyn, N. Y.-This invention relates to improvements in shades for gas lights, and consists in the combina-tion with the ordinary conical percelain or other shades, which shade the lights at the sides, of a bottom shade of porcelain arranged for the support of the conical shade, and calculated to shade that part of the light thrown down, and not shaded by the present shades. The said upward shade may correctly) to having ground a very damp lot of wheat, which he thinks, also be used with lamps, with slight changes in adaptation to the bras sourced on the bolting cloths. He is a miller of long experience and rings or supports, and is applicable without change of the form represented, to what are known as the student lamps.

> SUBMARINE DRILLING APPARATUS.-Samuel Lewis, Williamsburgh, N. Y. -This invention has for its object to furnish an improvment in the apparatus for raising the boat, or other floating platform, from which a gang of drills is operated, so that it may be unaffected by the rise and fall of the tide.

> STEAM PUMPING ENGINES.-S. D. Gilson, Syracuse, N. Y.-This invention relates to a new and important improvement in engines for pumping and forcing water, more especially designed as a steam fire engine, but applicable to other purposes, and it consists in such a construction and arrangement of parts that the motion of a reciprocating engine is duplicated by a simple crank movement from the shaft of an oscillating piston.

> APPARATUS FOR PACKING PRESERVES, ETC.-C. T. Provost, New York city.-The object of this invention is to facilitate the packing of tomatoes and other vegetables or fruit in the preserving cans. At present vegetables are packed so loosely that in many cases the value of the can exceeds by far that of its contents. By means of this invention the cans can be thoroughly and closely packed, and the useless water removed, without improperly mashing the fruit or vegetables to be preserved.

> SEATE FASTENING .- Thomas Almond, Fitchburg, Mass .- This invention relates to a new device for clamping and securing skates to the soles and heels of boots or shoes. The invention consists in the use of adjustable toe clamps and of a heel jaw all pivoted directly to the skate runner, so that the latter can be secured to the boot or shoe, without the use of straps or projecting levers.

> REIN HOLDER.-J. R. Achenbach, Saddle River, N. J.-This invention has for its object to furnish a simple and convenient device for holding the reins when the team is standing, which shall be simple in construction, easily attached to the wagon, and which will hold the reins securely, and at the same time in such a way that they may be instantly detached when required.

> ELECTRIC DECOMPOSITION OF COPPER AND BRASS.-Wm. Henry Walenn, London, England.-This invention consists in improvements in the electric deposition of copper and brass upon iron and other substances, to be made with less battery power, with greater economy, and more solidly and perfectly than has hitherto been done.

> HOT BLAST OVENS .- Job Froggett, Youngstown, Ohio .- This invention relates to improvements in hot blast ovens, and consists, first, in inclosing the air pipe connections in the oven together with the main parts thereof : second, in providing two or more pipes or sets of pipes for dividing the blast, to lessen the friction ; and third, in arranging air flues through the hot blast oven with holes admitting air immediately or directly to the gas where it enters the oven, or to the combustion chamber of hot blast ovens using other fuel.

> SHEET METAL SPOON, FORE, AND OTHER HANDLES.-H. C. Milligan, Brooklyn, N. Y.-This invention relates to improvements in the construction of the handles of spoons, forks, and other implements made of sheet metal, or handles only made of sheet metal, and consists in making them with oblique corrugations stamped into them on one side and raised on the other, between the edges which are left plane for a narrow space, the said corru gations being made for strengthening and ornamenting the handles, and in the case of spoons is designed to produce a sufficiently strong handle from the thinnest sheet metal of which the bowl may be made

> BARK MILL.-Lewis N. Hermance, Kingston, N. Y.-This invention relates to an important improvement in the ordinary bark mill, and has for its object to facilitate the adjustment of every mill to fine or coarse work, and to allow the runners to be raised when they should have become dull by wear, so that by being brought nearer to the grinders they may again be made useful.

SEWING MACHINE POWER.-John W. Jordan, Lexington, Va.-This inven tion relates to improvements in means for propelling sewing machines,

For tinmans' tools, presses, etc., apply to Mays & Bliss, Ply- mouth, st., near Adams st., Brooklyn, N. Y Cutlers' Grindstones, made by machinery. Wichersly, New-	a cistern, is to first collect it in a tank, and filter it before receiving it into the cistern below the surface. This will remove the organic matters, and	and consists in an apparatus for imparting rotary motion to a driving shaft mounted together with the sewing machine on a rocking or swinging frame, either by the rocking or swinging of the said frame to which motion is imparted by the operators mounted on the said frame in a suitable seat.
castle, or Nova Scotia, at 8c. an inch. J. E. Mitchell, 301 York ave., Phil'a. Glynn's Anti-Incrustator for Steam Boiler—The only reliable preventative. No foaming, and does not attack metals of boiler. Liberal terms to Agents. C. D. Fredricks, 587 Broadway, New York.	F. H. of N. V -Gold plate may have its color restored with.	MOTION POWER FOR CARRIAGES.—George Kilner and F. H. Simmons, Sul- livan, Ill.—This invention relates to improvements in motive power appar-
turing news of the United States. Terms \$4.00 a year.	ly poison. D. L., of Vt.—The extent to which expansion of steam may be carried by the lap of the valve alone, with convenience and economy,	poses, and applicable also for drawing other machinery. The invention consists in improved steering apparatus for the carriages to be propelled by the said improved motive power.
Cold Rolled—Shafting, piston rods, pump rods, Collins pat.double compression couplings, nanufactured by Jones & Laughlins, Pittsburgh, Pa. For mining, wrecking, pumping, drainage, and irrigating	does not exceed a cut off at one third of the stroke. It is hetter to use a cut-off valve, actuated by a second eccentric, than to use lap beyond this limit.	York city.—This invention relates to a new straw insole for boots and shoes, which, on account of its being a bad conductor of heat, serves to
Tori mining, wronning, primping, dramage, and mighting machinery, see advertisement of Andrews' Patents in another column. Caldwell's Dryer dries Brick, Fire Brick, Tile, Peat, Whiting, etc., as fastas made. J. K. Caldwell & Co., Philadelphia.	other substance appears to be iron ore, perhaps of value.	WINDOW BLIND.—Thos. Donato, New York city.—This invention relates to a new manner of securing pivoted slats in the frames of window blinds. The invention has for its object to provide a more secure fastening for the
Harvester Grinders—Loring's patent—grinds automatically, and any boy can sharpen a cutter perfectly. J. E. Mitchell, 310 York ave., Philadelphia.	11. M. Of MO. — The lefth for units is all of u name apprice by	slats, and, at the same time, greater facility for removing the same for repair. <u>THEASHING MACHINE.</u> -John S. Fulton, Gallatin, N. YThis invention relates to a new thrashing machine, into which the straw is fed transverse-
Winans' boiler powder, 11 Wall st., N. Y., removes Incrusta- tionswithout injury or foaming 12 years in use. Eleware of Imitations.	R. G. P., of Miss.—You will probably secure the business in- formation you seek by a notice in our "Business and Personal "column."	ly, so that it will not in the least be injured or broken by the thrashing