trates it, finally reaches the other pipe, by which it runs to Kosloff succeeded in overcoming the difficulties by using a the issue at t; in most cases this water is again useful for special metal of which he forms the holders for the carbon other purposes. As to the cooled air, it penetrates into the upper part of the apparatus, escaping by the tube, E, and reaches the places where it is wanted.

MEDICAL NOTES.

An Antidote for Mercury and Lead Wanted.

It is well known that the doctors of the regular or allopathic school insist on the free use of mercury, especially in secondary syphilis, that dreadful scourge of civilized countries. Many of our Western and Southern doctors pour in the calomel and blue pill for almost everything, as freely as the profession used to do in former times. Since this is so, and since the other medical schools have not yet furnished a practical substitute for mercury, the great want in medicine is a counteractor for a remedy often as bad if not worse than the disease. Chemistry and experiment must help the doctors, and still more the sufferers from mercurialization, if it be possible. Chemists and physiologists long ago found two, and only two, efficient agents, capable of rendering mercury in the system harmless; and these two substances, namely, iodine and sulphur, happened also to be the best neutralizers of another common cumulative poison, lead. But the difficulty was and is to cause the assimilation of iodine and sulphur, or either. Sulphur is nearly insoluble in any menstruum capable of being taken into the stomach. Iodine is very soluble in alcohol, oil, etc., and even in water to some extent, but largely soluble as iodide of potassium, a drug now used to excess. Unfortunately this iodide, also the tincture, are but slightly assimilated, passing off by the bladder. The small amount of iodine contained in that well known organic substance, cod liver oil, would be likely to prove more effective as an antidote to lead and mercury than a large quantity of iodide of potassium, because the organic oil enters into the blood and tissues. We put forth the suggestion that some vegetable may be found which is rich in iodine, also other plants, and harmless ones, may contain sulphur in an assimilable shape, for sulphur is an exceeding ly common element of organisms in general. If we could have strong extracts of such plants, the object spoken of would be accomplished. In that case, our calomel givers could salivate their patients to their hearts' content, and have them live through a dozen courses of mercury, a mat ter of profit and pleasure to every regular doctor.

Thousands of cases of chronic rheumatism, as well as consumption and other fatal diseases, have been traced to the use of mercury. Lead poisoning has become alarmingly prevalent of late years, producing colic, constipation, hard ened liver, neuralgia, nervous dyspepsia, and paralysis, which sometimes attacks people even in the prime of life. We will not discuss the question of lead in water pipes farther than to observe that every decent chemist knows that pure water acts on lead with astonishing quickness. To have water pipes, as used at present, coated internally with a sulphide or sulphate seems to be the only good practical preventive of lead poisoning. But in the case of lead pipes kept for weeks in hogsheads and barrels of ale and cider, there the solubility is certain and its effects destructive or pernicious to no smail degree. Such dangerous nuisances should be abated by law. Again, soda fountains where the water, highly charged with carbonic acid, acts on lead, and sometimes on copper in old fountains, are things deserving of legal attention. Many of the hair dyes in market, and some of the cosmetics, are well proven poisons.

Ice as a Medicine.

The great value of ice in certain diseases is not fully recognized by the medical profession, or by the public. Many years ago, it was found by one of the best English physicians—we think Dr. Marshall Hall—that small pieces of ice thrust into the rectum proved a safe and speedy remedy in cases of dysentery, where opiates and sugar of lead had been tried without effect. Very recently, that distressing complaint to which old people, travelers, and others are liable, retention of urine, has been relieved by the same use of ice as mentioned above. This plan is due to M. Cazenave. Common experience has shown that the swallowing of ice instead of ice water by people, in hot weather, is perfectly safe.

Effects of Uric Acid.

Dr. Gigot-Suard has given uric acid to dogs in doses of from 3 to 61 grains in 24 hours, and continued it for one or two months. The acidoccasioned remarkable morbid lesions, throwing light on a large number of chronic diseases. The alkalinity of the serum of the blood was often diminished. and it contained crystals of the acid and urate of soda. The organs and tissues upon which uric acid exerted its action are, men hers of thearm by came connected with the metal importing business in order of frequency: the skin mucous membranes and their glands, the lungs, kidneys, liver, pancress, brain, lymphatic glands, articulations, spleen, envelopes of the spinal cord and heart. Various forms of disease appeared in all these parts. Cancerous and tuberculous degeneration was produced several times in the lymphatic glands. These experiments are very interesting, and may lead to a more accurate view of the cause and cure of consumption and several other grave diseases.

The New Electric Light.

On the evening of the 5th of May, some interesting experiments with MM. Ladygin and Kosloff's electric light were conducted at the engineering works of Messrs. Warner, Euston Road, London. To obviate the difficulty of carbon being consumed when burnt in contact with oxygen, M. Ladygin placed sticks of carbon in a closed glass chamber filled with a gas not containing oxygen; but owing to the use of metallic connections, the carbon was subject to fracture. M

rods, and these are placed in the closed glass chamber.

The lamps which were experimented with were nine in number, six of them having two carbon rods, either of which could be placed in connection with the current of electricity. The carbon rods were all # of an inch in length, and one in each lamp was $\frac{1}{12}$ of an iach in thickness, the others being a trifle less in thickness. The other three lamps contained each a carbon rod, three inches in length, $\frac{1}{12}$ of an inch thick, and also connected with the main current. The first experiment consists in burning a carbon rod in contact with the atmos phere, the rod being consumed in a few minutes. current was then turned on the thicker rod in each of the six lamps, and a brilliant and steady light was produced, which improved as the current was increased in intensity. The reason for lighting the thicker rod first was that it might consume the oxygen in the lamp, by which the rod was slightly reduced. The current was then directed through the second rod with equally satisfactory results in all the six lamps. The three lamps with the longer carbon rods were then lighted and successfully exhibited, changes being frequently from the six to the three lamps and back again. The apparatus used for producing the current was Gramme's magneto electric machine. With the machine running at about 200 revolutions a minute, a moderate light was obtained. which was greatly improved at 300 revolutions, the maximum of intensity being obtained at 450 revolutions. The strength of the light depends upon three things—on the power of the machine and the number of its revolutions, on the length and thickness of the carbon rods, and on the quality of the carbon. The experiments showed that, with the same strength, of cur rent and the same number of revolutions, double the amount of light was obtained with three long carbon rods as compared with the six short ones. The experiments demonstrated satisfactorily the fact that the electric current could be subdivided. and hence, if practice confirms experiment, which it is believed it will, there is a wide field open for the application of Kosloff's system.—Telegraphic Journal.

---An Unfortunate Discoverer.

W. T. writes to say: "In No. 24 of Volume XXX of the SCIENTIFIC AMERICAN, Mr. John Hepburn, of Gloucester, N. J., states, in his communication on zodiacal light, that he was the discoverer of the glacial epoch theory, which Professor Agassiz only proved to be true. I do not deny that Mr. Hepburn discovered that theory; but it is a fact that Agassiz adopted it from Karl Schimper, the late brother of the African traveler Schimper, who was released by the English-Abyssinian war, Karl died in February, 1868, in Schwetzingen, near Heidelberg, Germany, of dropsy and of the ill treatment by a malicious neighbor. Schimper mentioned this fact to me, and complained that all his discoveries had been stolen from him, and he had no power to defend himself against the lions of Science. In fact, they left him nothing but his law of the position of leaves. When he was dead, a valuable collection of stones, curiously shaped by the action of water, was destroyed. He was trying to find a law for such shapes; but he never told me more about it, for fear I would misuse the information, although I was an intimate friend of his."

THE State of New York has appropriated \$50,000 for the erection of a monument at Saratoga to commemorate the surrender of the British army under General Burgoyne to the American forces under General Gates, October 17, 1777. The monument is to be 230 feet high.

---THE new aquarium, now in process of construction at Manchester, England, will be a splendid affair. The tank frontage will have a length of 750 feet.

To our Friends and the Publ c:

After the full statement heretoforepublishedof the difficulty of our firm with the Customs authorities, and the subrequent exhaustive examination of the whole matter by the Committee of Wavs and Means, which resulted in the entire remodeling of the "Mojety" and "Science Acts." we had not supposed it would be necessary to add anything further in the way of ex planation. But in the brutal and cowardly attack made upon us during the closing hours of Congress by General Butler, certain charges were pre ferred by him in his character as a Representative upon the floor of the House, against our firm, so definite and with so much of apparent authority that we feel called upon, in justice to ourselves and the public, to make once more a brief statement.

The charges specifically preferred were, in the main,

First. That we had, as a firm, attempted to defraud the Government and evade the revenue by importing metals, in the form of works of art and tatuary. In reply to this it is only necessary to say, that the importations to which General Butler referred were made before the firm of Phelps Dodge & Co. came into existence, and before anyone of the present or late the senior member of the firm, William E. Dodge, being at the time engaged in the drygoods business.

the senior member of the firm, William E. Dodge, being at the time engaged in the drygoods business.

Second. That in the tariff act of April, 1864, which temporarily increased the rates of duty on imports fifty perce it, "Mr. Dodge went to the Treasury and had a comma sken out of one place and put in another, and thereby cleared \$2,280,000."

The exact facts in respect to this charge are as follows: In the very full revision of the tariff, as embodied in the act of June, 1864 (and not the act of April, 1864, as perifically mentioned by General Butier). It was decided by both recuses of Congress, after full discussion, that an increase of outles on the and terre platts would imperil the large industries already taxed under the internal revenue in which the was used for the packing of fruits, fish, and vegetables, meats, and the like and so tendured uncerticed, and and increase, the receipts of the Tressury. At the same time it was accided to increase the duty on sheet fron, galvanized with an admix ure of in, which article had been imperied under the name of "tin plates galvanized," and so definitely and distinctly named in connection with and at the same rate as "galvanized iron" in every successive tariff since 1857. The bolt was passed on the 30 h of June, and went into operation immediately. On examining its provisions, we found that while the duty on "in and terme plates" remained unchanged at twenty. They error and solventy wentered, "rendered the whole paragraph ambiguous if not absurd, and apparated," rendered the whole paragraph ambiguous if not absurd, and apparated, imposed a rew duty of 2½ cents per pound, an increase of one hundred per cent on existity dutives. Seeing bow impossible it would be to enter our invoices at two conflicting rates for one and the same active, we applied at once to the Collector fact a decision in respect to the course to the Collector saw the difficulty, and referred us to Mr. Fessenden, then in New York, and just appointed Secretary of the Tressure. We called upon him, a

remain at 25 per cent ad valorem; that the "comma" had evidently been added by mistake in the hast of engrossing, and could not be considered as the true interpretation of the law.

He accordingly ordered the Collector to case the goods at 25 per cent, and stated that, on his return to Washington, he would issue a so-cial order making the construction official; and this be did under dute of July 22d, after taking fail time for consequention and consultation with his former colleagues to Congress and one expirts of the Treasury Department. As finally interpreted by Mr. Fessensen, moreover, the law was not the outline of the construction official; and the technical error been showed to stand and to entail a very excessive increase of dutiles, the advance in the price of stock on hand would have yielded to us, in common with all other importers and dealers, a very considerable profit. The facts, therefore, were exactly the riverse of those stated by G. neasi Butter.

Third, General Butler faites that, in our large and compil sated buttlers, every invoice broughtday by day by us to the fustom House, was wrongly stated, and that we work consciously snd could out you for the contrary (for as the paid attorney of the informer, he has given attention to the subject), that, after a most carrelul and merelless examination of some thousa de of our lavoices by Javine and his experts, aided by our own clerks bridged to injure their employers, with the full use of our books and capers, there were found only some diffy that could naily say be made the subject of controversy; and that in the case of some of these, of from twe try to thirty the usual dollars each, the urmost possible loss to the G. vernment could not have ocen a law for a mison decrease of 80 cents to one a list per invoice. And furthermore, that the total loss claimed by the Government on all the invoices as only about \$1,600, out of an importation of some \$40,000,00, and covering the space, the cape are underested in a gain to the revenue and at market price,

have just. Finally. Looking at all the circumstances and the character of this spiech, its constant falsifications and perversions of fruith, and its bratal personal lies, we are quite willing to leave the verdict as to its effect, to any who have fairly looked into the matters of which it trais. PHELPS, DODGE & Co.

NEW BOOKS AND PUBLICATIONS.

THE BROOKLYN COUNCIL OF 1874. With Decuments and an Official Report of the Proceedings. New Yerk: Wool worth & Graham.

SIXTH ANNUAL REPORT ON THE NOXIOUS, BENEFICIAL, AND OTHER INSECTS OF THE STATE OF MISSOURI. By Charles V. Riley, State Entomologist.

This is a document to be read attentively by the scientist, naturalist, and the farmer; and its value is not confined to the enterprising State which publishes it. Professor Riley has a profound and minutely accurate knowledge of the interesting and complicated science to which his life has been devoted: and his reportsare part of the contemporary history of our country. and should be circulated everywhere.

THE LAW OF DESIGN PATENTS, with Digests and Treatise. By William Edgar Simonds, Counseller at Law. \$4.50. New York: Baker, Voorhis & Co., 66 Nassau street.

The Supreme Court having recently passed somewhat fully upon a design patent cause, the author has deemed the present a fit coportunity to col ate cases on the subject of design patents, and to present them digested and supplemented with deductive comments in the volume above named. The status of these patents has heretofore not been unattended with doubts; and hence the present work, alming as "t does to cover the entire field, and to give a clear comprehension of the decisions of the courts on the subject, will doubtiess meet with a ready welcome at the hands of the profession.

OLD AND NEW. The July number of this admirable magazine, edited by Edward E. Hale, opens a new volume, the teutn. For vigorous thought, entertaining and useful contents, the magazine has no superior. \$4 a year. Boston: Roberts Brothers.

TROW'S NEW YORK CITY DIRECTORY FOR 1871-75 gives some interesting statistical information regarding the increase in population of the metropolis. Last year, the number of names contained was 225.161—this year it is 229,503. Estimating each name as the representative of five persons, an augmentation of 7,000 in population is indicated. The volume contains a newly engraved and excellent map of the city, including the two new wards recently added. The arrangement of names, etc., is the same as in former years, and thereis a very large number of advertisements of prominent business houses. Published by the Trow City Directory Company, 11 University Place, New York. Price six dollars.

Inventions Patented in England by Americans. [Compiled from the Commissioners of Patents' Journal.]

From June 2 to June 10, 1874, inclusive. CAR TRUCK AND AXLE BOX .- A. Higley, Cleveland, Obio. CLOTHES WRINGER.-T. G. Corliss, New York city. Folding Bedstead .- E. E. Everitt et at., Philadelphia. Pa. HARNESS.-I. M. Singer (of New York city), Paignton, England. MAKING PAPER BOXES .- H. R. Heyl, Philadeiphia, Pa. Making Stench Traps, etc.—W. A. Butler. New York city. MAKING WRITE LEAD, ETC .- A. P. Meylert, New Britain, Conn. MILLSTONE DRESSING MACHINE.—S. Dean et al., La Crosse, Wis. SOREW NUT. -- W. M. Van Anden, Brookly, N. Y.

Becent American and Loreign Latents.

Improved Car Replacer.

John R. Wilds, Brookiyn, N. Y .- This ingenious invention is something which is much needed upon city horse car lines, where it is a daily occur rence for caratorun off the track, causing vexatious delays to the passen gers and very severe work to the horses. The device is simply an iron plate grooved beneath to fit the rail, and having flinges to secure it thereto. From them iddle of the replacer au irregular shaped grouve inclines downward to the rail in each direction. The plate extends over the outside of the rail, and has two oblique channels which intersect the grooves. This part of the replacer is supported on the pavement. The cuannels extend from the center of the replacer, and incline downward in each direction so as to terminate at the bottom outside of the "tread" of the rail, to receive the flange of the wheel of the displaced car, and to conduct it up to the center, and then down the longitudinal groove to the rail. By slightly modifying the form of the grooves and flanges on the under side to fit it to the rail, the displaced wheel between the rails may be replaced in thesame $manner. \quad \textbf{The invention may be applied to the ralls of either horse carroads and the rall of the r$ or to the T rails of locomotive roads

Impreved Watchmaker's Tool.

Julius F. Young, Owstonus, Minn. - The object of this invention is to furnish means for reducing the tension and elasticity of hair springs of watches, so as to vary the time or action of the watch movement from fast to slow, as may be desired. There is an adjustable rest, which is designed to hold between it and a stationary stand any diameter of watch balance wheel with the hair spring and parts conn cted therewith. This rest is adjusted by a fluger screw. The balance wheel with the hair spring being thus confined, the end of the bair epring is taken hold of with a pair of pliers and is gently drawn along under spring clamps which are screen down. These hold the hair spring flat to the bed, so that, with a scraper of any suitable kind, the hair spring may be reduced so as to alter the running of the watch from five minutes to an hour and a half in twenty four hours. When the clamps are raised, the hair spring is allowed to slip back by its own tension, so as to assume its former diameter, and is readily recoiled.

Improved Hog Trap.

James M. Oversbiner and George M. Overshiner, Elwood, Ind .- This is an improved trap for catching and holding hogs. In using the trap, the end is opened; and the hog being driven into the trap, the lower end of a lever is moved outward to open a space large enough for the passage of the bog's bead. As the hog attempts to eac spe, the lower end of the lever is moved inward, clasping the bog's neck and holding him securely, a pawl locking saidlever in place. The hog can now be conveniently operated upon as desired, there being suitable devices for placing the saimal in proper position.

Improved Standard for Vehicles

James J. Martin. Houst n, Tex.-This is a stanchion pivoted in a strong metal box adapted to be fastened to the side of the platform of the car. The box is open at the top and at one end so that the stanchion can be turned down on its pivot by the side of the platform to be out of the way. A spring is arranged in each box to so act on the stanchion as to hold it in upright position; also to hold it when down. The invention also con sists of a metal bar on the justde of the stanchion, extending from the plat form nearly to the top, and having a screw boit at each end passing through for clamping side boards to the stauchion when a temporary box is wanted for the platform. This bar draws back into a groove in the side of the post, flush with the surface, when it is not to be used.

Improved Thill Coupling.
Eli Quaintance and Remus D. Hale, Transitville, Ind.—This invention consists in a peculiar mode of supporting the shafts so that the end projection of the plates shall enter and be embedded in the rubber spring. It also consists in a novel mode of holding the rubber by a tongue projecting from the cross bar of axle clip. The ends of a Tjournal pin form journals in jaws. One jaw of each pair is slotted from the top to the journal hole Iron plates, when the tongue or shafts are turned to an upright position. will pass through the flots and allow the tongue or shafts to be detached. Between the laws and back of the fournal pins are pieces of india rusber which are for the purcose of preventing raitling, and are held in place by means of the tongues of the clip bars and parrow ribs on the back side of the T journal pins. When the tongue or shafts are in use, it is impossible for them to become detached. Byraising them to an upright position they are disconnected in a moment.

Improved Saw Set.

Sylvanus Bartlett, Westport, N. H .- The saw set is of the usual shape and material. A U-shaped gage piece is applied around the rear and sides of the anvil, adjusted by a screw bolt and set nut, and is fixed firmly in position by a set screw, so that the sidewise projecting front ends of the gage move forward or backward along the fore end of anvil and hammer till the gage is set to the exact length of the teeth of the saw required to be set. $\!\!\!\!$

Improved Railway Rail Joint.

Anson B. Johnsen, Washington, assignor to L. Johnson, Vincennes, Ind. The ends of the rails are curved outwardly, and in the space thus formed /s placed a metallic tongue. The latter has central projecting shoulder which form a support for the top part of the rails. The top part of the tongue forms a continuous connection with the top part of the rails, and allows the smooth passage of the car wheels, without battering or otherwise injuring the rails. The rails, tongue, and base plate are firmly fastened to the crossile by spikes placed into grooves of the base flanges of the rails and tongue, in the usual manner, passing through perforations of the base plate.

Improved Washing Machine.

James L. Austia, Little Rock, Ark.—in using the machine, the driving roller is raised out of the suds box by means of levers, and the clothes to be washed are spread upon the exposed part of an endless apron. The roller is then lowered upon them, and as it is revolved the clothes are carried between aprons and two other sets of rollers. The clothes are made to pass beneath the driving roller, and are again carried in between the endiess aprons, and will thus continue to circulate until thoroughly

Improved Combined Lamp Collar and Shade Holder.

George W. Hadneld, Brooklyn, N. Y .- The collar is applied in the usual way. The shade holder is affixed by supports to a base ring, which is made of such a size as to fit upon the collar. Upon the outer surface of the lat ter is formed a screw thread, into which fits the screw thread cut upon the inner surface of the base ring of the shade holder. Bythis means the shade holder will be firmly and securely connected with the lamp in such a way as to be entirely independent of the burner, and allow the burner and chim ney to be conveniently attached and detached and replaced with new ones without disturbing the shade holder.

Improved Clothes Frame.

Lafayette Magee, Olean, N. Y.—This invention consists of clothes racks adapted to be suspended from a vertical wall, and composed of a series of parallel barsjoined by horizontal rods. The two clothes-suspendingframe may be set in an inclined position, the upper and overhanging frame being supported on the lower one, and both folding together when not in use.

Improved Hat Ironing Machine.

Autoine Giraux, Orange, and Louis Drovon, Newark, N. J.-This inven tion consists of irons suspended from balance levers by flexible joints, and of levers arranged on swinging supports in such a manner that the labor of presenting and holding the irons to the work is materially lessened. and theirons can be applied and the pressure regulated to better advan

Improved Mitten

John I.. Whitten and J. Hermon Whitten, Burlington, Vt .- The essential feature of this invention is in so cutting the parts as to form the mitten or glove without a seam on the palm or inner side of the thumb, and so as to bring the seam on the outside of the finger, and above the ball of the thumb.

Improved Safety Guard Watch Chain.

Robert A. Johnson, New York city.—This is a useful device for connect ing a watch with a guard or chain in such a way that the watch cannot be detached by twisting off the ring from the stem. It consists of a short extra chain, one end of which is attached to the guard near the ring, and its other end is secured to the stem. By this construction, should a pickpocket get hold of the watch and twist off the stem ring, the safety chain will still hold the watch securely connected with the guard, so that it cannot be carried off. This will prove of value to people who are obliged to do much traveling in New York street cars.

Improved Sewing Machine Treadle.

Daniel E. Lill:s, Jackson, Mich.—A movable footboard is attached to s cranked rod, so as to shift on it crosswise the length of a slot, in which is a binding screwfor holding it in any adjustment. Guiderods attached to the footboard slide thereon. The adjustment is made to allow the opera tor to so place his feet upon the board as to work it either by a swinging leg movement or by an abkle movement.

limproved Medicine Dropper.

Dennis Warner, London, O. —A rubber oulb clasps the neck of the bottle with its open end, and has a discharge tube placed at one side and near the ength, the end being a flat surface or a little concave, and at a right angle to the axis of the built. The device drops by pressure, the same sized tube and caliber dropping equally well all degree of fluidity, from sirups to ether and chloroform; it also enables the operator to time the frequency of the drops, so as to make an accurate count.

Improved Excavator

Ignacio Arcos, San Antonio, Texas. -This invention consists in a scoop suspended in adjustable supports by chains to a crank axle provided with arms, to the extremities of which are attached ropes that are wound around a windlass. Said scoop is raised or lowered through the agency of the arms attached to the crank axle in connection with the ropes and windlass, and the apparatus, as thus described, is supported upon wheels pro vided with shafts.

Improved Apparatus for Steaming Grain.

William C. Knox and Josiah N. Knox. Evansville. Ind .- In this device, the wheat is subjected to the action of steam as it passes downward through cylinder. In the latter is first a hopper, then a conical plate, apex unward then anotherhopper, another plate, and so on, through and over which portions the grain passes, alternately contracting and expanding in its flow. In the tube which supports the conical plates are made apertures through which steam is conducted to the interior of the cylinder.

Improved Candlestick for Christmas Trees.

George W. Reessing, Chicago, Ill.—This is a candlestick, the socket of which is composed of a coil and the fastening device of a stem, the latter being arranged to cross the space at the bottom of the coll, to form a sup-Port for the candle.

Improved Miner's Candle Holder.

Nells Larseu, Mill City, Col. Ter.—A pin is riveted in one end of a bow spring, and passes through the other extremity so that the spring can spread or move outward freely. An elongated curved end of the spring forms a socket for the candle. Working on the pin, in similar manner to the blades of a penknife, are a hook, an awl, and a blade, so that the mine is thus provided with a convenient combination instrument.

Improved Miter Box.

Calendar Potter, Bloomsburgh, Pa.—The object of this invention is to construct a miter machine which may readily be set to any desired angle for cutting the molding accurately and quickly with a hand saw, and with out loss of time. The invention consists of a pivoted saw guide, which is made reversible by a lever arrangement on the bottom of the bed plate, while a second lever connection, operated from the opposite side, adjusts the stops which define the angle of the saw guide with the central axis for cutting the miters.

Improved Pump.

William Urquhart and John U. Livingston, West Hoboken, N. J.-The pumps may be double or single acting and of any approved kind; but it is seential that they all connect alike with the suction and discharge pipes. They are seated on a plate, which bolts to standards and has a slot through which a suction pipe projects; also branches connecting the suction with the outside pumps, fastening them by a washer and nut applied to the suction from below.

Improved Can for Cooling Milk during Transportation. George W. Fluke, Mount Pleasant, Iowa.—This is an improvement on a milk can patented by thesame inventor, March S. 1874, No. 148,114, by which the ice chamber may be made in smaller size, saving space in shipping the cans, and also the ice consumed be considerably economized. The improvement consists in providing the ice chamber of the milk can with an inside lining of wood at the side wall, top, and bottom of the same, with the exception of the portion of the main can inside of the ice chamber. The inclined false bottom is grooved at the under side for conducting the melted water to the exit opening of the true bottom.

Improved Inking Apparatus.

Gilbert E. Jones, New York city.—This improvement consists in the combination of one or more movableblades with the duck roller. Foreign substances, which find their way into the ink fountain, are apt to collect on the under side of the knife and form pads which press against the roller and wipe off the ink from the surface thereof. The effect of the movement of the blades added between the roller and knife is to dislodge the pade before mentioned, thus insuring the supply of an even film of ink to the

Improved Churn Dasher.

John E. Shelton, Hickman's Mills, Mo.-To a short vertical tube are se cured two parallel disks,in which are formed numerous small square holes. The outer edges of the disks are connected by short vertical bars. thecenter of these and to the tubeare pivoted horizontal radial rods, to which are secured plates, which are made of such a size as to turn freely between the disks. The latter are also perforated. By this means the milk is finely divided, and is thrown into numerous currents and counter currents, bringing the butter in a very short time.

Improved Illuminating Roof Plate.

Niels Poulson, New York city .- This invention is an improvement in illuminating plates for roofing purposes, and consists in providing the shauks of the bull's eyes with lugs inclined upon their upper side, to adapt them to be firmly clamped to a metallic plate in openings in which they are inserted.

Improved Egg Carrier.

William O. Strong, Ypsilanti, Mich.-Egg carriers formed of slitted and interlocked paper strips soon become useless in consequence of the projecting ends of the strips becoming broken. And when the slits of each strip are on one side thereof, instead of being alternately arranged, it is impossible to raise the carriers from the trays in which they rest without disconnecting all or part of the strips. To remedy these and other objections, the inventor connects the projecting ends of the strips to the side of the exterior cross strips by means of linen, muslin, or other suitable

Improved Piow.
Julius Hartmann, Gilman's Point, Ky.—The mold boards are hinged to the share, which is narrow and nearly vertical. When the share is turned to one side or the other, the moldboards are thereby adjusted at different angles, one to act as a landside, the other to turn the furrow like an ordinary moldboard. These parts are secured in any adjustment by means of a lever and notched arc bar.

Improved Composition for Emery Wheels and Whetstones Isaac Butterfield, Weissport, Pa.—This invention consists in the combination of the ashes of bark with a cutting grit and cementing material, in the manufacture of emery wheels and whetstones for the purpose of forming a stone of efficient cutting power, the friable ash performing the mechanical function of fallingout of the interstices as the stone wears away, and thus leaving exposed a sharp cutting surface.

Improved Rub Roll for Condenser Cards Alonzo Heaps, Darby, Pa., assignor to himself and Enos Verlenden, same

place.—This invention consists of a tube having the feather or spline formed on it, and so constructed that it fits on the spindleof the rub roller nicely. It is secured by a nut or other means, so that it can be readily taken off and another put on. A new feather can also be put on when the old one is worn out, without disturbing the spindle.

Improved Hay Cart.

John Rumrill, Salina, Kan.-This invention relates to means whereby hay, after having been cured in winnow, may be raked and carried to the stack by one continuous operation, thereby greatly lessening the usual labor and the customary waste by hauling it or by dragging it with horses andcircumjacent ropes or chains.

Improved Railroad Bed.

George Potts, Unionport, O.-This invention consists in a continuous elastic bed for a railroad rail, which dispenses with all ordinary forms of fastenings for the same, and allows it free vertical movement. To this end, the fron rails rest lengthwise on wooden sleepers, and are secured by chairs which are bent inward at the top to form flanges that bear on the base of the rail. Thus the rail is confined only between the top of the chairs and the wooden sleepers.

Improved Car Coupling.

Martin Kurtzeman Crestine. ().—This invention relates to that class of car couplings wherein the coupling pin is held up by a slide until the drawheads of two cars come into collision, and are automatically coupled, the object being to relieve car couplers from the usual peril of their occu pation. The invention consists in an uncoupler of a very peculiar con struction, and which seems admirably adapted to accomplish its pur

Improved Screw Plate.

George D. Dean, New York city, assignor to Frank G. Green, same place.—The object of this invention is to furnish a convenient and efficient means for cutting screw threads on gas pipes, in the operation of putting such pipes into buildings. The invention consists in a screw or die plate, in which are combined all the standard sizes and threads used for the pur pose, with a guide for each die, the dies and guide holes being arranged in a convenient and compact form.

Improved Whiffletree.

Harvey M. Kelley, Irving, Ill .- A strong ring fits upon the end of the biffletree, and has an eye formed upon the one side to receive a book. Upon the forward and back sides of the ring are formed straps extending along and fitting upon the whiffletree, which have upon their ends inwardly projecting prongs, which enter the wood and prevent the clip from being drawn off. A band is slipped upon the whiffletree, and is designed to fit closely upon it near the ends of the straps and closely confine the same in place. It is secured in place by a screw. The eye of the hook is made open, and with its ends tapering and overlapping each other. The sing eye,and straps are cast of malleable tron, in one piece .

Improved Corn and Cotton Planter.

William H. Griffith, Jones' Mill, Tex., assignor to himself and M. J. Strick and, same place.—The corn part and the cotton part of thehopper are separated by a partition. In the cotton hopper there are two saws on a horizontal shaft, over and partly in the discharge throat, for forcing the cotton seed through and preventing the throat from clugging. By the side of these saws is a spiked contral block, also on the shart, to work the cotton seed down to the saws. This shaft has a pulley outside of the hopper, on which a belt works from a pulley on the drum shaft, to turn said shaft.

Improved Planter, Cultivator, and Stalk Chopper.

John L. McCaleb. Atascosa, Tex.—In the middle part of the axle is formed a bow, so that it may readily pass over tall plants without breaking or injuring them. Beams are secured to the ax'e and pass back parallel with each other, and at right angles with the axlefor a short distance, and are then bent outward at an obtuse angle. The rear parts are held by an arch, in the top of which the hangles are inscried. The rear parts of the handles are held at the proper elevation by a U-shaped brace, the bow of which is secured to the arch. The furrow is opened to receive the s-ed by the plows, which are bolted to standards which swing upon the axle and the inclination of which, and consequently the depth to which the plows enter the ground, may be regulated at will. in adjusting the machine for use as a cultivator, the furrowing plows, the shafts and hoppers, and their attachments, are detached, and three or more standards, provided with suitable plows, are placed upon each of the beams. To the rear ends of the beams are detachably attached standards, having outwardly projecting journals formed upon their lower ends to receive the small wheels by which the rear parts of the machine are supported.

Improved Horse Power-Improved Baling Press

Peter K. Dederick, Albany, N. Y.—The first is an improvement on an invention patented by the same inventor, June 25, 1972, which was a plan for arranging the shipping connections within a hollow journal, on which revolves the large drive wheel, having the drum arranged under it. The bore of said wheel was made large and fitted on a hollow stationary center or journal. In the present invention thesame plan is made available for, further simplifying such machines, and economizing space by greatly enlarging the central opening or the hollow stationary center circle, so that the drum itself is placed within the hollow journal, and the hight of the machine thus materially lessened. Hence, the invention consists of a stationary circle or hollow center within which the drum is located, and which forms the journal for the wheel. The same inventor has also devised an improved baling press, which is particularly adapted to baling cotton, in consequence of the pressed material being open to receive the cloth after passing from the press box. The cotton is deposited into a hopper, whence it falls of its own gravity into a press box and is forced against a head by a plunger, which is operated byan eccentric through a connecting pitman. Any cotton overlapping the plunger is folded down by a roller suspended by springs in the end of the hopper, and passes behind shoulders, which may be formed with teeth, which prevent its return. This operation is repeated until the bale is built up in sections, having all of its sides clear of all obstructions for putting on the cloth. The baleafter being tied off, is removed by slacking back on the friction head, which is then placed against the front of the press box, ready for the next operation.

Improved Seed Planter.

John Johnson, of Perry, and Luther W. Ingram and John Harper, of Naples, Ill.-This invention improves the construction of the seed planter for which letters patent No. 28,490 were issued to John Johnson, May 29, 1860. The front frame consists of two cross bars, connected near their ends by two longitudinal braces, to the ends of the former of which runners are bolted. The lower parts of the latter are recessed to receive rotary cutters, which cut through roots, sods, and other obstructions, and thus prevent the seed-dropping device from catching upon them. Upon the runners are formed double share plows, by which the furrow is opened to reseive the seed, which is introduced through a vertical hole in said runners. The seed then falls upon the wide flat part of the furrow before any soil can fall in. The upper parts of the runners are recessed to receive hoopers, which are pivoted by a rod screwed into the runner. The upper end of the rod passes to the dropper's seat, and is secured by a nut. By suitable mechanism a boy, sitting upon the seat, can readily vibrate the hoppers to drop the seed. The bottom of the hopper has two holes formed through it, of such a size as to contain enough seed for a hill, and is recessed to receive a small circular plate, which has two notches cut in its edge, at a little distance from each other, to allow the seed to pass through to the holes in the hopper bottom. The part of the plate between the notches is placed directly over the hole, through which the seed passes to the ground, so as to serve as a cut-off, to prevent any more seed being drupped at a time than enough to fill one of the holes in the bottom of the hopper. The sides of the furrow are pressed in at the rear of the plows by the concaved rims of the wheels, which press the soil down upon the seed and form a low ridge along the row.

Improved Cotton Planter.

William T. Huff, Atlants, Ga.-The rear and lower end of a shoe rests in a notch in the upper part of a spout, which passes down between, is secured to, and supported by bars pivoted to the rear uprights. The bars est in inclined grooves in the sides of the apout, are clamped to the same, and are bent inward and forward, so that their forward ends may be upon and close to the opposite sides of a wheel, and may rest upon the transverse pins, which are passed through the said wheel at a little distance from its rim. By this construction, as the wheel revolves, the ends of the bars drop from one pin to another, which jars the spout and shoe, and causes the seed to pass out regularly.

Improved Churn.

Asa Palmer, La Cygne, Kan.-This invention relates to an oscillating churn box, having vertical spring supports, and secured thereto by clamping devices. A lever is detachably secured to the upper ends of the springs in such a position as to bear upon bars on the cover, and thus hold the later down, and at the same time hold the cream box in place upon the springs. The dasher is formed of a series of slats, set inclined. In operating he churn, it is moved back and forth, which causes the milk to pass rapidly from one end of the box to the other through the dashe., the inclination of the slats throwing it into numerous currents and into violent agitation, bringing the butter in a very short time. The boxis easily oscillated, a slight push being all that is required to keep it in motion.

Improved Folding Cot Bedstead.

Werdell Wright, Phomicia, N. Y .- The legs at each end are connected by a transverge rail, and are pivoted to the side rails so that they will readily fold back against theinner sides of the side rails. When the bedstead is in use thelegs stand bracing, and are supported by the held and foot boards, the end pieces of which have projections which enter mortises in the legs. The foot hoard is privated, so that it will fold down between the side rails The head may also be pivoted so as to fold in a similar manner. By means of a projection on the head and foot boards, the legs may be more perfectly supported than they would be by the rails.

Improved Truss.

William Shields, Mount Sterling, Ill .- This is a conveniently and easily applied agail truss or bandage for the purpose of tieating and curing successfully diseases of the rectum.

Improved Ore Separator.

Pentecost J. Mitchell, Brigham city, Utah Ter., assignor to himself and Joseph E. Gay, New York city.—The vat is mounted on an upright frame, under an overhead frame. The sieve, which is suspended in the vat from rock shaft, drops, when let fall, on bars supported by sprisgs. Below thesieve the vat is hopper-shaped, with passages through it, having an adjustable gate. Below the vat is a receiver, into which the matters fall to be conducted in to the upper compartment of a descending reciprocating car. The materials then pass through a contracted passage, over an amaigamator and into a basin, over the top of the lower end of which the light matters pass off with the water, leaving ores not previously collected deposited in the hottom of the basin. The sieve may be lifted up at any time bove the top of the vat by a lever, and be swung forward over the side of the Vat and tilted unward to be cleaned of the Coarse matters lodging in it.