Examples for the Ladies.

A. Cady, of Cambridge, Mass., has used her Wheeler & Wilson Machine constantly in all kinds of dress-making, since the spring of 1858, without repairs, and it is now as good as new.

Burnett's Cocoaine for the hair takes precedence all over the United States

Answers to Correspondents.

SPECIAL NOTE. - This column is designed for the general interest and instruction of our readers, not for gratuitous replies to questions of a purely business or personal nature. We will publish such inquiries, however when paid (or as advertisements at 1.00 a line, under the head of "Business and Personal."

ALL reference to back numbers must be by volume and page.

D. F. C., of N. J.-There have been no less than eleven patents taken on nickel plating.

J. M., of —.-.Inquire of your bookseller, or write to Baird, Philadelphia, for Box's "Practical Hydraulics." It contains all necessary tables and formulæ for the solution of most practical problems in hydraulics.

W. W. M., of -----Your query is not sufficiently intelligible.

E. C. B., of Wis.—To increase the capacity of an engine, beyond the capacity of the boiler, gives rise to loss through increased radiation and friction, owing to increased surface and weight of parts.

A. B. B., of Thames, N. Z.-We have no information relative to the use of rubber spings, for storing power, for the propulsion of street ears, etc., that we have not already published.

G. S. A., of Ind.-A fly wheel is an accumulator and distribuof power and a regulator of expenditure, not a creator, of power.

E. K. J. of Mich.-The only way to positively determine the

initial pressure in the cylinder of your engine is to use the steam engine ! indicator. It is useless for us to guess at it for you, with only one element of information, namely, distance of cylinder from boiler.

J. W. G., of -----To restore horseshoe magnets that have lost their power from disuse, proceed as with new ones. Place the poles, of the magnet to be charged, against the poles of another, making opposite poles meet. Then $\ensuremath{\mathbf{d}} raw$ a piece of soft iron, placed $\ensuremath{\mathbf{a}}^t$ right angles upon the magnet to be charged, from the poles to the bend. Do this a number of times on each side of the magnet. If the magnet is of good steel, this produces a maximum power. It is the method of Jacobi, and is considered one of the best.

W. G., of Pa.-We do not think tannate of soda is an article of general commerce as yet, though if it is as cflectual in scaling boilers as stated by a former correspondent, it must inevitably become in great demand. It may be formed by slowly adding a solution of tannin to a solution of caustic soda.

A. P., of Cal.-Ewbank puts his steam current outside of which requires far less steam.

DAMAGED MIRROR.—Pour upon a sheet of tinfoil about three drams of quicksilver to the square foot of foil. Rub smartly with a piece of buckskin until the foil becomes brilliant. Lay the glass upon a flat table, face downwards; place the foil upon the damaged portion of the glass; lay a sheet of paper over the foil, and place upon it a block of wood or a piece of marble with a perfectly flat surface; place upon it sufficient weight to press it down tight; let it remain in this po ition a few nours. The foil will adhere to the glass.-C. T., of Vt.

H. B., of Pa., writes, in regard to an answer on hydraulic and steam pressure, Vol. XXV., page 281, that they are equal in effect on I have always thought from what I have seenin testing boilers that water had greater effect than steam; as I have seen them leak under test, and have steam to same number of pounds, and no perceptible leak. I supposed it was because water was denser and the boiler was tight from not having the iron warm. I have two more subjects which have caused first we reply that the effects described as occurring with boilers under water pressure do not indicate greater strain, and are accounted for by our correspondent correctly. To the second query we answer in the af firmative. The third query is not intelligible.

Queries.

[Wepresentherewith a series of inquiries embracing a variety of topics o greater or less general interest. The questions are simple, it is true, but we prefer to elicit practical answers from our readers.)

1.-TINNING SHEET IRON.-I wish to know how tinning upon sheet iron is done, and how much it costs per pound. -G. H.

2.—WATER WHEEL POWER.—Will you please inform me how large a pipe it will require to supply a 20 feet overshot waterwheel with sufficient water to run one run of threefeet sixinches and one run of two eet six inches burrs, with bolt, smutter, and two elevators. I can run the whole thing now with forty pounds steam, (boiler 18 feet by 3 feet 6 inches engine 10 by 18 inches.)-W. G. D.

3.-BALLOONS.-What is the lightest and toughest material or small balloons ?-J. H. B.

4.-INCRUSTATION IN BOILERS.-I noticed in a recent number of your paper that the tannate of soda has been successfully used to prevent incrustation in boilers. Please inform me how much is required for a lo comotive boiler 18 feet long, 40 inches diameter, with 120 two inch flues and how often it should be used .-- J. H. W.

11.—PAINT FOR OUTSIDE WORK.—Will some of your correspondents give a recipe for an economical and durable wash or paint for outside work? Neutral color desired. -C. H. M.

12.-PRESSURE ON SLIDE VALVES.-In a steam engine, with flat slide valve, what proportion of the steam pressure, unbalanced and tending to produce friction, is there on the solid ends of the valve when sliding on the seat and not over the ports? How much is the pressure on the back counterbalanced by the steam between the valve face and the seat, without regard to ports or openings? What proportion of the weight of a steam engine, with flat slide valve, including steam pressure on its back, is required to move it, weight being applied direct?-F. A.

13.—PROPORTION OF KEY WAYS.—Please inform me if there is any rule laid down for the different sizes of key ways in shafts and wheels; and, if so, where I can procure it.-T. H. B.

14.—SPEED OF STEAM ENGINE.—Suppose that a steam engine has a cylinder 12x18 inches, with ports 1x10 inches, and is making 120 revolutions per minute, being very heavily loaded. Would it be better to give the engine more speed and enlarge the pulley driven by the engine running the machinery as before? Would there be as much strain on the engine, and would there be much more friction on the slides, wristpin, and main journals, the work done by the engine being the same in both cases The boiler that furnishes this engine with steam is a locomotive boiler with 357 square feet of heating surface.-E. F.

Declined.

Communications upon the following subjects have been received and examined by the Editor, but their publication is respectfully declined:

ARE ALL PLANETS INHABITED ?---C. M. CHEMICAL FIRE ENGINE,-H.

PSYCHIC FORCE.-C. E. S.-J. S.-H. G.

WOOLEN MANUFACTURE.-S. S.

Answers to Correspondents -R. F. H.-S. C.-S. P. T. A. R.-T. W.-W. G. E. H.

QUERIES.-E. N. S.-H. M.-J. W.-P. B.-R. F. H.-W.-W. W. M.

Recent American and Loreign Latents.

Underthisheading we shall publish weekly notes of some of the more tram nent home and foreign vatents.

SCREWING BOLTS INTO BOLLERS. - Allan Talbott, Richmond, Va. - The object in this case is to prevent leakage of water or steam from boilers by rea son of the rusting of the plate bolts or from their becoming loose in conse quence of strains put upon them in various ways. The desired end is at tained by means of bushings or thimbles which have solid bottoms and are inserted in the bolt holes to receive the bolts.

PROCESS OF WELDING COPPER.-Christian L. Schurr and William G. Rehbein, Baltimore, Md. - This invention relates to a process whereby copper the vacuum nozzle, which requires steam in large quantity to get the exhaust. Professor Draper puts the steam nozzle inside of the vacuum tube, contact as can be produced in iron, a thing which has heretofore been deemed impossible.

> ORE CRUSHING MACHINE.-Samuel Hughes, Charleston, S. C. -This inven tion relates to a metal shell lined with crushing ribs, and combined with an inclosed cone bearing similar crushing ribs on its exterior, the object of the machine being to reduce phosphatic rock to a size suitable for a thor ough washing of the same.

> ANIMAL TRAP.-Oscar S. Eiving, Rome, Tenn.-This invention relates to a trap in which the animal entering steps upon a hinged floor that yields beneath it, which yielding, by means of intermediate mechanism, springs the trap; or, if the floor does not yield, the same result is accomplished by the pulling of the animal on the bait, the trap being provided with teeth which impale the animal, and also cast it out of the trap, so as to leave it in readiness for another.

> STEAM GENERATOR.-William Byers, Philadelphia, Pa.-This invention relates to boilers made in separate compartments with fire spaces between them, and it consists in such compartments when constructed with bulged or swelled surfaces between the transverse retaining bolts.

HARVESTER.-John S. Truxell, Greenburgh, Pa.-This invention consists in an arrangement which enables the draft of the team upon a harvester to be regulated insuch a manner as to counteract the resistance, offered to the sickle bar by the crop, whether the same be little or much.

DESK AND CHAIR COMBINED. - Archibald A. Porter, of Griffin, Ga. - This is an improved school desk or office chair, provided with a desk or writing board, so constructed that the said desk or writing board may be conveni ently turned back out of the way.

BLASTING PLUG .-- Julius H. Holsey, of Butler, Ga. -- This is a new imple ment, to be inserted, previous to blasting, in the holes drilled into wood or rock, and is to receive the explosive charge, with the object of insuring greater safety in the preparation of the charge and more perfect results of blasting, without danger to the attendants. The invention consists in the use of a hollow pin, of wood metal, or other material, made in two sections. to receive the charge and control its force.

BELL PIANO.-Carl G. G. Buttkereit, of Toledo, Iowa.-This invention consists in actuating bell hammers for musical instruments. To effect the desired result a combination of keys, dampers, toggles, and springs is employed, the details not being susceptible of verbal description, but involv ing only well tested and efficient elements of mechanism.

SELF HEATING SAD IRON. - Joseph Melder, of Munchen, Bavaria. - This is a self heating sad iron, so constructed that it will consume all the products of combustion before the same can escape, thereby avoiding inconvenience from smoke and gas. The invention consists in the application to the heater of plates and wire gauzs, which, when heated by the fire, will serve to consume the products of combustion. The invention consists also in the arrangement of receptacles for heating crimping and curling irons, the said irons being either removable or adjustable.

Knight, of Westmi

MACHINE FOR SAWING SPOKES.-Thomas J. Tolan, of Delphos, Obio.-This is a combination of a rotary saw, with two disks and a spring, together with other peculiarities in the machine, whereby spokes may be sawn from bolts, which is claimed to possess advantages over other machines hitherto used for this purpose.

IMPROVEMENT IN PLANING MACHINES,-Charles E. McBeth, Frederick Bentel and William C. Margedant, of Hamilton, Ohio, and Henry Climer, of Muscatine, Iowa. The reader is referred to page 255, current volume of the SCIENTIFIC AMERICAN, for a full description, with engravings, of this machine.

CORN PLANTER.-Abraham H. Stark and John C. Mitchell, of Nevada Iowa.-This is an improved self dropping, check row corn planter, consisting of a combination of a hopper having a single hole in its bottom; a measure of the quantity of grain to be planted; a case, arranged thereunder, having two holes and a slot in the top, and having one central discharge hole in bottom; with plates, rigidly connected, movable together, and having two holes apiece therein; and the tubes extending not quite to bottom of case. Also, a combination with an adjustable shoe, clasp and arm to fasten the said shoe detachably to the frame of the planter and the runner thereof

PIPE WRENCH ATTACHMENT FOR MONKEY WRENCH .- A. H. Woodruff, of Lansing, Iowa.-This invention consists in a wedge shaped block of steep with teeth upon its inclined face, which is placed upon the movable jaw of a monkey wrench, and which has on each side a spring catch. which engages with the shank of the wrench when the block is in position. The teeth of the block will, when thus adjusted, engage with a pipe or rod so that the latter can be turned as desired.

SULKY CULTIVATOR.-Philip Hewitt, of Farmland, Ind.-The nature of this improvement precludes an explanation of details. The object sought is to render this class of cultivators more effectual and convenient in use, and to this end the inventor, while using many well known devices, adds fenders formed of spiral wire cords attached to plates on the inside of the cultivator plows, to protect the plants, and a peculiar construction of frame with its cat and levers, to render all parts of the machine easily adjustible and controllable by the operator.

HARVESTER.-George S. Grier, of Milford, Del.-This is an attachmento; a studded carrier to the self raking apparatus of harvesters, with a geat shifting bar, so constructed that the carrier may be automatically thrown: out of gear with its actuating mechanism, and thrown into gear by the driver, the design being to so improve the self raking attachment that its action may correspond to the varying quantity of grain in different parts of a field, and that the gavels may be made of nearly uniform size.

HORSE HAY FORK.-Charles A. Howard, Pontiac, Mich.-One part of the fork has two curved tines, the other part has only one curved tine. These parts are pivoted together and are further connected by bars, which are crossed and pivoted to the shanks of the two divisions of the fork. To these bars or links is attached a tripping device, which by pulling a cord releases the parts so that they open and discharge their load. We judge this to be a convenient improvement, and it certainly is simple, strong, and durable.

HAND SUPPORT AND ADVERTISING MEDIUM FOR STREET CARS.-Mablou Warne, of Philadelphia, Pa. has invented an improved support and advertising medium for railway cars. A circular frame is composed of two similarly constructed parts, each provided with a groove, so that, when put together, they form a hollow ring for the reception of an endless cord on which is placed a round wooden bar or handle. The cord is tightly clamped be tween the circular sections by means of screws, but the handle slides freely thereon. The upper car is slotted to admit of the attachment of a strap, whereby the device is secured to the roof rails of a car. Each of the sec-tions of the frame is cast with an inner flange or rabbetted edge, whereby, when put together, a recess or annular groove is formed, suitable for the re ception of circular plates of glass. Between these plates it is designed to place advertising cards, prints, or pictures. Thus, the prints while protect ed will be legible through the glass, and similar or different advertisements nay be placed in the same frame, which, from the position of the frame in the car, it is manifest cannot fail of quickly attracting the notice of passengers. The support is free from a tendency or liability to cramp the hand of the person grasping it, adapted to conceal the junction of the ends of the cord, as well as tightly clamp the same, and is also a device calculated to adorn the car in which it is suspended, while incidentally constituting a most efficient means of displaying advertisements.

COMBINED DINNER PAIL AND LANTERN .- This invention relates to a new dinner pail which is provided with a lamp whereby its contents can be heated, and with a transparent side or door through which the rays of light from the lamp can be projected. Horace C. Ketcham and Willie W, Ketcham, of Newark, N. J., are the inventors.

HARNESS BUCKLE.-Othniel Brown, of Albia, Iowa.-This invention relates generally to harness buckles, but particularly to that patented Decem-ber 21, 1858, by O. B. Smith. The cross bar of the frame of the buckle has a stud pin rising vertically from it to enter the hole of the strap to be buckled, which is passed under one cross bar and over another. A clamping bar or lever is pivoted in cars rising from the side bars of the frame, and bearing at the short end on the strap around the pin, a hole being made in the short end for the pin. The long arm is bent inward, so as to bear against the strapinside of the main frame and close to one of the cross bars in such a manne: that the straightening of the strap by the tension of the draft will force that long arm of the lever out and the short one in, in a way to hold the strap more firmly, according to the strain.

TWINE CUTTER.-Charles Carrington Lewis, of Gainesville, Ala.-This is a new, simple implement to be used in stores, warehouses, etc., for the pur pose of cutting twine and cords used for the tying of packages. The invention consists chiefly inapplying the cutter to a pivoted balance weight, which is connected with a sliding bed on which the twine is cut. The bed is drawn in during the cutting process and moved out subsequently to bring the end of the twine or cord within convenient reach for future usc. A spring holds the twine in contact with the movable bed

LIGHTNING ROD COUPLINGS. - David W. Demorest, of Newark, N. J. This is an arrangement of a lap and lock splice on the sections of rod, whereby the same are not only jointed but actually locked together. The invention consists, also, in the application of a screw to the coupling or bearing for locking one of the sections to the coupling, and thereby furnishing an absolute support.

CIGAR LIGHTER.-Joel B. Miller, of Rondout, N. Y.-This is a new pendent cigar lighter, similar to those now used in cigar stores, but so arranged that it will produce the flame by the consumption of kerosene or other burn invention consists pendent burner and reservoir to a frame or arm that, by vibrating the former on its pivot, the wick will be shifted to give a greater or less flame as may be required.

5.-SPRING IN SHAFTING.-Will shafting that has been heated and bent, and afterwards straightened and turned up, be likely to s pring at the place where it was bent?-J. M. G.

6.-WORMS IN HICKORY.-I am engaged in a business in which a good deal of green hickory wood is used, and would feel obliged if any one can tell me of a simple preventive of worms, which often render it useless. -S. F.

7.-CUTTING BEVELS,-Can any of your readers give me a rule for cutting miter corners on beveled work? I am working in a wagon shop, and often want to cut a miter corner on a seat or body, where the cor- relates to an apparatus in which the gases from one or more forges, instead of pers are square, but the sides and ends, or some of them, are beveled. I have to go by the old cut and try rule, and a rule for cutting them would be of therein, thereby furnishing heat for the generation of steam in a boiler congreat service to me. -- C. H. S.

8.—FACING FOR SAND MOLDS.—What can I use to dust over the surface or green sand molds to prevent the sand from burning, soas to produce clean bright castings? Should I use a flux in the process of melting ?-W. Z. M.

9.—CEMENT FOR LEATHER.—How can I make a cement or glue, for joining leather, that shall be waterproof, strong, and not expensive ?-G

10.—PULVERIZATION OF GELATINE.—Can any of your readers tell me how to pulverize French gelatine to the fineness of flour?н. м. с.

construction of clothes frame, so made as to be self supporting in every position without requiring hasps or locks, and which can be folded together into a narrow space.

PROPULSION OF VESSELS.-John P. Bruce, of Brooklyn, N. Y.-This in vention relates to a new mode of propelling marine vessels; and consists in driving the screw or propelling wheel by means of water wheels revolved on driven by water elevated by pumps, the latter being driven by a steam en-gine, the whole arranged in the specification with reference to accompanying drawings, without which the details cannot well be explained.

FORGE.-Joseph R. Morris, Houston, Harris Co., Texas.-This invention passing off unconsumed, into he atmosphere, enter a furnace and are burnt nected with said furnace, which steam is used to drive a' fan, that impels a blast into each forge, and is also used to propel an engine that operates a hammer; the exhaust from the engine being conducted to the tweers of the forges through pipes, in which are placed red hot iron plates, which decompose the steam, taking upthe oxygen and liberating the hydrogen that is burnt in the forges

MACHINE FOR MAKING PAVING BLOCKS.-Samuel Wallace Brooks, of Brownsville, Texas. - The cutting knife of this machine is hexagonal, or of any other form desired, and, being actuated by suitable mechanism, the wood which has been previously sawn into proper lengths, is forced, by a weight down, endwise upon the grain, upon the knife, which thus shapes the blocks. It is claimed that wood paving blocks may thus be rapidly and perfectly prepared,

WATER WHEEL.-Samuel D. Taylor, of Hazleton, Pa.-An improved mode of applying gates to turbing wheels: the effects of which are, first, to enable the gate to work close to the wheel, and thereby to bring the unchecked velocity of the water to bear upon the buckets as soon as it passes the throats; secondly, to admit of adjustment without changing the course o the water to the wheel. These effects are produced by means of a series o movable arc plates, and arc extensions of stationary chutes, combined concentrically and closely with the wheel and each other, so that the course of the water will not be changed (as where the chutes move) nor the velocity impeded, after passing the throats, by an adjustment of the gates.

BARK MILL.-Owen Coogan, of Pittsfield, Mass.-This is an improved machine for reducing or breaking up bark for tanners' use, whether the same be in a dry, damp, or green state. This invention consists in the arrangement of a hinged adjustable leaf with the feeding table and roll, and in the method or means of mounting the feeding roll, by which means the machine can be used for reducing all kinds of bark to a suitable degree of fineness, to best serve the purpose for which it may be intended. The manner of reducing or cutting, will, it is claimed, be quite uniform, and therefore most sat-isfactory. The feed roller, besides slowly supplying the cutters, serves also to hold the bark, so that it cannot slip or move out of the way when acted upon by the cutters. The cut bark is by the cutters carried off the back end of the table. The cutting-points of the saws or cutters may be of hard metal and removable on their blades, to be replaced when worn.

NOVEMBER 25, 1871.]

to that particular class of window sashes, hinged at the bottom to a movable stile, and locked thereto and to the frame work at some point above. It consists in a double and reversible catch, which locks the sash to the stile the small traps used in sinks, which become sufficiently heated by the quan and the stile to the frame. The sash is pivoted to the stile in the usual wayand fitted snugly thereinto against a suitable flange or stop. An improved catch bar, having studs respectively on each side of its free end and pivoted to the stile, is used. Slotted plates on the top of the sash, and slotted plates on the stile frame, receive the stude of the catch bar. By this construction one double studded and reversible catch on each side of the sash does all the ocking.

SUSPENDED LIFTING JACK.-Hector C. Havemeyer, of New York city. This invention relates to a new manner of applying hydraulic lifting jacks, with the object of using them in warehouses, magazines, sugar houses, shops, &c., for holding, goods, hogsheads, or other devices, suspended, and conveying the same along elevated tracks from one to another part of the buildings. The invention consists in suspending the lifting jack from a truck running on an elevated track; in providing it with guide rods and a lower cross-piece, whereby it is adapted to the suspended position and to the operation of lifting goods from the floor; and in the application to it of a universal joint, allowing it to swing in either direction without running the truck off the rails, or springing the plunger. This is a good and practical invention.

PAVEMENT.-Hermann A. Gunther, of New York city.-This invention consists in making a concrete pavement or sidewalk, constructed so that it may be taken up in small sections. Between blocks of artificial stone or concrete, is placed guin, tar, rubber, (or other water repellant substance,) poured into the joints between the blocks while said substance is in a molten state. The effect produced is to form a completely water tight joint, while small sections of the stone may be taken up whenever desired by the application of heat to the joints.

APPARATUS FOR RELEASING HORSES .- James Harrison, of New York city. -This invention furnishes an improved apparatus for application to the stalls of a stable, which will enable all the horses or other animals secured in said stalls to be disengaged and led or drawn from said stable, when, in case of fire or other accident, there may be no time to enter each stall and disengage and lead out the animals one at a time, or when the said animals may be so frightened that they will not leave their stalls. An excellent device, which should be in every large stable.

ROCKING CHAIR.-John W. H. Doubler, of Darlington, Wis., assignor to himself and William Logue, of same place.-This invention has for its object to furnish an improved rocking chair, which will rock easily and noiselessly and will require no more room than an ordinary chair made withoutrockers A low stool or rocker bed, the side bars of which are flanged along the outer edges of their upper sides, said flanges serving as guards to keep the rockers rom lateral displacement, support the rockers, which are placed under the seat of the chair. To the outer sides of the flanged side bars of the stool or rocker bed are attached side boards or guards. to prevent anything from getting beneath the rockers. The chair legs are made short; and to their ower ends are attached short rockers; or, if desired, the legs of the chair may be omitted and the rockers attached directly to the chair seat. Springs gradually retard the movement of the chair in either direction, and finally stop it at the proper point, and then assist, by their stored up power, in re versing the motion of the chair.

EARTH PULVERIZER AND HARROW. - James Lefeber and George W. Shults, of Cambridge City, Ind.-This invention relates to a new way of more effectually pulverizing cloddy ground, after the plow, by arranging the broad points of rotary crushers in two sets, which act on the clod in lines at an angle to each other, and in a novel mode of locking the front crushers. A front set and a rear set of star wheels are arranged on horizontal parallel shafts extending across a frame mounted on them vertically to the direction in which the apparatus is to move. Each star wheel works independently of the other, and has a hub, working at the end against the hub of the wheel on each side, or one end of the hub of each outside wheel works against the frame. The arms of each set of wheels are arranged to work between the arms of the other set, at the sides between them for cleaning each other. The points of the arms of the front set are made broadest in the planes of rotation of the said wheels for cutting notches or channels in the ground in the direction of the movement of the machine, and the points of the rear set are made broadest in the planes of the axl s to cut across or perpendicular to the cuts made by the front set for increasing the cutting action on the ground, and these latter points are made broader at the outer ends than toward the axle, for facilitating the escape of the stones, clods, or other matters which might wedge between them if they were narrowest at the points. A cranked rod extends across the frame parallel with the shafts and in such relation that when swung downward the points of the front set of wheels will be engaged by it so as to be held against rotation, and there by act as common scratching harrow teeth. A hand lever is pivoted to the frame and arranged with the cranked rod, so that the latter may be lifted out of connection with the points, when they are to be left free to turn, which may be done while in motion. This machine is adapted to cultivating each side of a row of plants by removing one or more of the star wheels from both shafts at the center and applying loose sleeves, corresponding to the hubs thereat to confine the remaining wheels in the right positions, so that the vacant spaces may make room for the plants; and for the greater protection of the plants, especially from the action of the points, which are more likely to throw earth upon them, the protecting disks are applied on the shaft, inside of the wheels next the space, which effectually prevents any earth being thrown upon them. Such disks may be applied to both shafts. When the machine is used for pulverizing and harrowing, these disks are removed and the star wheels replaced.

SOLDERING APPARATUS.-Luke Albert Smith, Kansas City, Mo.-This re lates to a new and improved device for holding tin cans for soldering them; and it consists in an expanding and contracting cylinder. A ring, with a vertical flange on the inner edge, is mounted on a suitable support, with an expanding and contracting cylinder of sheet metal, arranged within said flange and supported by an extension. At the side opposite this extension, the shell of the cylinder is separated longitudinally, and the parts lap each other considerably, suitable mechanism being employed to contract the cylinder. The cylindrical part of the can to be soldered is placed over the cylinder when contracted. The cylinder is then expanded, and the can to be formed swelled out against the flange into the required shape, and then held for soldering, after which the cylinder is contracted and the can removed.

HORSE POWER.-Hemphill Smith, Shelby Station, Tenn.-This invention relates to an improved arrangement of draft rope, windlass, and weight in connection with the frame of a horse power, in such a way that the wheel can *Graphic* may be also had of August Brentano, 33 Union Square, N. Y., or

WINDOW SASH.-John Groves, of New York city.-The invention relates | plug. The object of the improvement is to have a large trap in which all the grease will condense and be retained, instead of passing out into the pipe below and choking them up in inaccessible places, as is now the case with tity of warm water passing through them to maintain the grease in such a fluid state that considerable quantities are carried out into the pipes below. The usefulness, and practical character of this invention, will be apparent to any plumber who inspects it.

> IMPROVED RAILWAY RAIL CHAIR.-Thomas Donahy, Empire City, Ne yada.—This invention has for its object to furnish an improved railroad rail chair, designed for use one length of a rail from switch chairs, to avoid the necessity of frequently cutting rails to allow the switch to work. By this construction, as the rails expand and contract, one or more of pieces may be taken out and put in to keep the space between the rails properly filled, and, at the same time, to prevent the rail next the switch from being pushed toward and crowdlng the switch rail, and thus interfering with its proper working. The chairs are cast right hand and left hand, so that the detachable piece may always be upon the outer side of the rail. If desired, the chair may be made with a right hand and a left hand opening, a bar or partition being between them to get the doubled length of extension and contraction, thus giving a greater scope for adjustment.

TILT HAMMER.-Patrick Breen, Auburn, N.Y.-The object of this inver tion is to produce a mechanism connected with a tilt hammer, of suitable kind for retaining the drop on its rebound, and prevent it from falling again after the main stroke. The pattering of the drop on its return stroke is, in many cases-as, for instance, in minting-injurious, spoiling the fine execution of the main fall. To avoid this, the inventor has arranged a peculiar cam, which acts on the hammer or drop so as to catch it with a short arm on the rebound, and prevent it from falling again. The invention consists in a new combination of mechanism, whereby the cam is enabled to act on the drop, and in a new general arrangement of parts for moving or locking the cam, as may be desired. This brief notice will enable those familiar with the subject to see that this is really an important improvement in tilt hammers for fine work.

ROTARY STEAM ENGINE.—George V. Atwood, Mount Hope, Ala.—This invention relates to an improvement in that class of steam engines which receives steam continuously. A piston wheel, provided with disks and pivoted within a revolving cylindrical wheel, in combination with the spiral groove in the cylinder, for the admission of steam, and a steam wheel, cylinder and piston wheel, combined and arranged in a peculiar manner, constitute the invention.

LIGHTNING CONDUCTOR.-Othniel Prestor, South Dansville, N.Y.-While the inventor is aware that it is contended that the conductivity of a light ning rod is according to the area of its cross section, his own experience which has not been very limited in the business of manufacturing and putting up lightning conductors, leads him to doubt the entire correctness of that theory. In practice, he claims to have found that surface has much to do with the conductivity of lightning rods. Conductors composed of broad straps of metal having great superficial area and but slight cross sectional area, have been employed with good results. With a view of increasing the superficial area, conductors have been made of woven; wire, and also of braided or plaited wire in the tubular form. This lightning conductor is however, made of wires twisted together around a core or tube, and is in outward form the same as a wire rope, and continuous from end to end, and may be of any required length. In twisting the wires around a solid core the core is withdrawn, which leaves the conductor itubular. If twisted around a metallic tube, the tube is allowed to remain, which also leaves the conductor tubular. In either case the conductor is a tube composed of wirestwisted together, and having the strength and flexibility of a wire rope when made without the interior tube, but is, of course, more stiff and rigid when made with the tube.

WOOD BENDING MACHINES.-Hiram McDonald, Shortsville, N.Y.-Thills of one horse vehicles, to be bent, being confined to a former (whereon they have been previously bent, in a machine, to form vertical curves at the ends) are placed on a bed formeror die whereon the final bending is to be effected This consists in a long thin plate of metal, having the upper edge provided with the configuration necessary for imparting the form to the under side o the thill, and has four (more or less) pairs of bars attached to its sides and extending above the edge considerably higher than the depth of the pieces to be bent. The upper ends are mortised for keys. The pair of bars, at the end of the die where the curve is greatest, are arranged radially to the axis of the curve for having a better action on the pieces than they otherwise would. The upper former or die also consists of a long thin plate about the thickness of the pieces to be bent, having its lower edge formed on the curved line required for the upper side of the thill; and also having a shoulder projecting downward from said line at the point where the front ends of the thills terminate. It also has a prolongation at this end, arranged in the vertical guide, and is connected at the center of the top to a vertically reciprocating bar of a press for forcing it down upon the wood pieces to be bent, the said pieces being placed on the lower die between the bars, and the said die being placed on a suitable bed against stops, which latter serve as guides in a ljusting it to the right position to receive the die between the bars. The upper die has a notch in the lower edge, opposite each pair of bars, to admit of driving a key into said bars, above the said pieces, after they have been bent by said upper die and before it is raised, to key the pieces fast to the lower die, to be held until they become sufficiently set to retain their form when released. Both machines have been patented by the same inventor.

NEW BOOKS AND PUBLICATIONS.

The London GRAPHIC is probably the largest and finest printed illustrated weekly newspaper published in the English language. From it are largely drawn the engravings that appear in our American illustrated weeklies The general reading matter is, of course, more adapted to English than to Americanreaders; but theillustrations, and the sketches which accompany them, are of interest to readers everywhere, as they form an epitome of the most important current events in all parts of the civilized worl). Like othe first classEnglish literary publications, it is edited with great ability. This splendid paper is now supplied regularly to every part of the United States. By sending, direct to the publishers, one pound sixteen shillings in a money order, anyone of our readers may obtain it, with the Christmas and all the extra numbers. United States postal orders should be addressed and made

A REVIEW OF THE THEORY OF NARROW GAUGES, as applied to Main Trunk Lizes of Railway. By Silas Seymour, General Consulting Engineer. New York: D. Van Nos-trand, Publisher, 23 and 27 Warren Street.

This paraphlet is undoubtedly one of the most able reviews of the narrow gage question that has yet appeared. It expresses the views of one of the most clear headed and farsighted of our American railway engineers, which those who peruse the book will see coincide to the opinions we have, from time to time, expressed relative to the fallacy of most of the arguments in favor of narrow gages. In another column, we publish some of the most pointed of Mr. Seymour's able arguments in favor of wide gages; and though, as the title implies, these arguments are intended to apply to "Main Trunk Lines," they lose nothing of their force when branch lines are under consideration The pamphlet is timely, and will do much toward correcting false ideas upon the policy of adopting in haste what we think is sure to be repented at

SUPPLEMENT TO BICKNELL'S VILLAGE BUILDER. Containing Eighteen Modern Designs for Country and Suburban Houses of Moderate Cost. With Elevators, Plans, Sec-tions, and a variety of Details, all drawn to Scale. Also, a full set of Specifications, with Approved Form of Con-tract and Estimates of Cost. New York: A. J. Bicknell & Co., Architectural Book Publishers, 27 Warren Street. Price \$5.

The eighteen designs, some of which are hand somely colored, embraced in this book, are contributed by six architects of recognized skill and expe-rience in village building. The designs are remarkably neat and tasteful and are so drawn and engraved, in connection with explanatory plans, elevations, and notes, that the peculiar adaptation of each to individual wants can be understood by any non-professional man of ordinary intelligence. The book is, therefore, an excellent guide for those about to build, as not only the essentials to handsome, comfortable village residences are compaised in the designs, but variety enough is presented to meet most requirements.

Official List of Patents.

ISSUED BY THE U.S. PATENT OFFICE.

FOR THE WEEK ENDING NOVEMBER 14, 1871.

Reported Officially for the Scientific American.

SCHEDULE OF PATENT FEES:

On each Caveat	\$10
On each Trade-Mark	\$25
On filing each application (or a Patent, (seventeen years)	*15
On issning each o uginal Patent	
On appeal to Examiners-in-Chief	\$10
On appeal to Commissioner of Patents	*川
On application for Reissue	*3∪
On application for Extension of Patent On granting the Extension	¥iU
On granting the Extension	
I On tiling a Disclaimer	
On an application for Design (three and a half years)	
On an application for Design (seven years)	
On an application for Design (fourteen vears)	

A sketch from the model or drawing, relating to such portion of a machine

upward, but usually at the price above-named. full Specification of any patentissued since Nov. 20, 1866 at which time

at a reasonable cost, the price depending upon the amount of lubor

involved and the number of views.

Full information as to price of drawings in each case, may be had by addressing

MUNN & CO., Patent Solicitors. 37 Park Row, New York,

120,809.—WASHER.—W. Arnold, Pawtucket, R. I. 120,809.—WASHER.—W. Arnold, Pawtucket, R. I.
120,810.—DRYING PAPER, ETC.—H. Dodge, Aibany, N. Y.
120,811.—STOVE.—W. Doyle, Albany, N. Y.
120,812.—VARNISH.—T. J. Elliott, New York city.
120,813.—HORSESHOE.—D. Grim, Pittsburgh, Pa.
120,814.—BANDAGE.—J. G. Groocock, New York city.
120,815.—SEWING MACHINE.—T. J. Harper, Atlanta, Ga.
120,816.—INHALER.—R. B. Heintzelman, New York city.
120,817.—RUFFLER.—E. L. Howard, Malden, Mass.
120,818.—MOP HOLDER.—G. B. Isham. Burlington. Vt. 120,813.—MOPTIER.—E. E. HOWARD, Malden, Mass.
120,813.—MOP HOLDER.—G. B. Isham, Burlington, Vt.
120,819.—PUMP.—S. W. Kelly, Nashville, Tenn.
120,820.—RIGGING.—J. C. Knowlton, Providence, R. I.
120,821.—BOTTLE STOPPER.—G. C. Lowe, New York city.
120,822.—PADLOCK.—S. Loyd, New York city.
120,822.—PADLOCK.—S. Loyd, New York city. 120,823.—CANAL BOAT.—J. M. McMaster, Rochester, N. Y. 120,824.—GAS MACHINE.—W. T. McMillen, Richmond, Ind. 120,824.—GAS MACHINE.—W. 'T. McMillen, Richmond, Ind.
120,825.—STAND.—J. R. Palmenberg, New York city.
120,826.—THRASHER.—A. V. Pitts, Chicago, Ill.
120,827.—AUGER.—R. L. Priester, Souder's Station, Md.
120,828.—GRAIN BINDER.—M. T. Ridout, Sun Prairie, Wis.
120,828.—CORK PULLER.—C. T. Simpers, Philadelphia, Pa.
120,830.—CORK PULLER.—C. T. Simpers, Philadelphia, Pa.
120,832.—POTATO DIGGER.—J. Smith, Ridgeville, Ohio.
120,832.—POTATO DIGGER.—J. Smith, Ridgeville, Ohio. 120,833.—CHAIR.—P. M., O., A. S. Snell, Williamsburgh, O. 120,834.—KILN.—D. M. Sprogle, Annapolis, Md. 120,835.—SMOKE STACK.—D. B. Strope, Fort Wayne, Ind. 120,830.—SMOKE STACK.—D. B. Ströpe, Fort Wayne, Ind.
120,836.—DITCHER.—F. Taylor, Indianapolis, Ind.
120,837.—ENGINE. N. W. Taylor, J. W.Brightman, Cleveland, O.
120,838.—ROLLING METAL.—L. Thomas, Pittsburgh, Pa.
120,839.—ROOT CUTTER, ETC.—G. Trump, Second Fork, Pa,
120,840.—STOVE.—J. W. O. Webb, Cedar Rapids, Iowa.
120,841.—PUMP.—N. W. Wheeler, Morristown, N. J.
120,842. ORDWARE L. Whitworth Machaetar England 120,841.—PUMP.—N. W. Wheeler, Morristown, N. J.
120,842.—ORDNANCE.—J. Whitworth, Manchester, England.
120,843.—LET OFF.—A. J. Woodman, Indian Orchard, Mass.
120,843.—HOIST.—W. E. Worthen, New York city.
120,845.—HUB.—E. A. Archibald, Methuen, Mass.
120,846.—PROPELLER.—N. B. Baldwin, Chicago, Ill.
120,847.—WHEEL.—I. E. Bower, Bainbridge, Ga.
120,848.—WASHER.—J. Brower, J. and H. Campbell, West Alexandria Ohio. Alexandria Ohio. 120,849. – DASHER. – W.C. Broyhill, W.D. Sperry, Tremont, Ill. 120,850.—LAYING TILES.—M. A. Burnham, New York city. 120,851.—ROOFING.—O. W. Burritt, Weedsport, N. Y. 120,852.—SHOE, ETC.—F. P. Buzzell, Milton Junction, Wis. 120,853.—WATER METER.—C. Campeaux, New York city. 120,854.—LINK JOINT. C.B.Carpenter, North Attleborough, Ms. 120,855.—SEWING MACHINE.—W. Chicken, E. S. Moulton Chelsea, Mass. 120,856.—Governor.—G. W. Clark, Council Bluffs, Iowa. 120,857.—APPLE CORER.—S. C. Collins, Oregon, Mo. 120,858.—BEE HIVE.—T, S. Collins, H. Senseman, Tremont, O 120,859.—Evaporator.—J. Cook, Wellsville, N. Y. 120,860.—BRIDLE BIT.—H. M. Cornell, Brighton, Ill. 120,861.—REIN.—J. P. Crutcher, T. Y. Vancleave, Cornersville Tenn. 120.862.—GUNPOWDER.—C. W. Curtis, London, England. 120,863.—CHUCK.—A. F. Cushman, Hartford, Conn. 120,864.—JACK.—A. A. Davis, Clark's Green, Pa. 120,865.—BED.—J. M. Farnham, Hartford, Conn. 120,866.—FIBER.—J. Felber, St. Louis, Mo. 120,867.—REFRIGERATOR.—J. W. Fisher, Islip, N. Y. 120,868.—HEMMER.—D. Forest, Eastport, Me. 120,869.—SAD IRON.—E. A. Franklin, Brenham, Tex.

be used either inclined or horizontally, either as a tread wheel or draft When used as a tread wheel, a rope is stretched along the frame and connected with a windlass, which may have a ratchet and pawl to be prevented from unwinding. The horses are hitched to this rope, the windlass serving to equalize their power. In connection with the rope may be weights suspended at the corners of the frame. The horses are hitched to $these \ weights, and their breast straps connected with the rope. \ Their \ power the rope \ the rope \ the rope \ rope$ will be increased the more they draw on the weights while treading on the wheel. This arrangement of rope and weight serves properly to control the animals during action, and dispense with the driver.

FLY TRAP.-Samuel F. McGown, Rockville, Ind.-The invention consists in a revolving wheel flue and a water tank containing water or other liquid. The face of the wheel is covered with molasses and water, or some other substance that will attract flies. The bottom of the flue covers a section of the wheel extending from or near the center to the edge of the wheel, and in width being equal to about half its length. The wheel revolves under the frontedge of a flue or space, without disturbing the flies: but the back edge of the flue is dropped down so near the wheel that the flies, being disturbed, will rise from the wheel and fly upward toward the light, and striking a plate glass, will drop to the water and be drowned. The wheel is revolved by clockwork, and is noiseless and continuous in its action.

STENCH TRAP.-Michael Gafney, Newark, N. J.-This invention consists in the employment of a large vessel in connection with the pipe, made in two sections, the one leading into it extending nearly to the bottom, and the other leading from it connected near the top; the said vessel having a large opening at the bottom for cleaning it out, said opening being closed by a | yet visited an American city, it is worth preserving in every library.

Willmer & Rogers, 47 Nassau street, N.Y.

THE ANNUAL REPORT OF THE COMMISSIONERS OF PUBLIC PARKS, for the Year ending May, 1871. New York: Wil liam C. Bryant & Co.

This is a voluminous and handsomely printed document, making a roya octavo volume of 427 pages. It is profusely illustrated with photographs lithographs, and wood engravings-the latter, however, on account of their inferior quality, detracting from, rather than adding to, the attractions of the volume. It contains a List of Commissioners and Officers—the Annual Report of the Department-Reference to the Central Park Map-a Legal History of the Department Jurisdiction-Report of the Comptroller-Topographical Description of the Central Park-Gifts, Devises, and Bequests-Lists of Animals-Reports of various Officers, etc. etc. The Report will prove of great value to those interested in the progress of our city improvements.

THE GREAT FIRES IN CHICAGO AND THE WEST. History and Incidents—Losses and Sufferings—Benevolence of the Nations, etc. etc. By a Chicago Clergyman. To which is appended a Record of the Great Conflagrations of the past. Illustrated with Maps and Scenes. Published by J. W. Goodspeed, Chicago, Cincinnati, St. Louis, and New Orleans. H. S. Goodspeed & Co., 37 Park Row, New York. This is a book of remarkable interest, and which is certain to meet with a large sale. As a record of incident connected with the greatest fire that has