valve are not changes in the principle or in the manner of operation which would relieve their stop valve from condemnation as an infringement; they are a mere substitution of equivalents. For this reason it seems not improbable that the conclusion to which I am compelled is not because the actual invention of the complainants has not been infringed or copied by the defendant, but because the specification and claim upon which the patent is granted has so narrowed the ground on which they stand that they fail to realize all the monopoly to which, in virtue of the actual invention, the patentee may have been entitled. If this be so, the Court is nevertheless unable to relieve them. We can only deal with the rights of the complainants as they are defined in and secured by the letters patent; and, as thus defined, my conclusion is that the defendant's stop valve is not an infringement.

The bill of complaint must, therefore be dismissed with costs.

J. Van Santvoord, for complainants.

G. Gifford, for defendants.

THE NOVEMBER METEORS.—Between seven and eight hundred meteors were observed in the course of five hours, on the evening of November 27, at the Observatory of Vassar College, Poughkeepsie, N. Y.

Facts for the Ladies.—Mrs. Paschol, New Middleton, Tenn., has a Wheeler & Wilson Lock-Stitch Machine in use since 1858; it has run constantly without repairs; has 10 of the original 12 needles. Other kinds of machines wear out in a few years; she has never seen a Wheeler & Wilson worn out. In 1867, she earned \$317.75, besides doing the sewing for her family and six negro work hands and considerable for her neighbors. See the new Improvements and Woods' Lock-Stitch Ripper.

Business and Lersonal.

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

Ross Bro's Paint and Grain Mills, Williamsburgh, N. Y.

Wanted—Nail Keg Heading Turner. Manufacturers, send illustrated circulars and prices to William Brown, "Pioneer Steam Keg Works," St. Louis, Mo.

Male and Female Agents Wanted-100 per Cent. Profit. Address, with Stamp, for particulars, P. O. Drawer 217, Buffalo, N. Y.

For Steel and Iron Set Screws, send to Reynolds & Co. for Price List, New Haven, Ct.

For Sale, two Patents. Address H. S. Ball, Spartanburg, S.C. Dobson's Patent Scroll Saws make 1100 strokes per uninute. Satisfaction guaranteed. John B. Schenck's Sons, 118 Liberty St., N. Y.

Permanent Photograph Printing, just what is wanted by Manufacturers. Send for Circular and specimens to Amer. Photo Relief Printing Co., 1002 Arch St. Philadelphia, Pa. John Carbutt, Sup't.

Millstone Dressing Diamond Machine—Simple, effective, durable. For description of the above, see Scientific American, Nov. 27th, 1869. Also, Glazier's Diamonds. John Dickinson, 64 Nassau St., New York. Agricultural Implements and Machines for Fall and Winter usc. R. H. Allen & Co., 189 & 191 Water Street, New York.

Valuable Patent Right for Sale. The amusing Toy Attachment for Planos, illustrated in Scientific American, October 28th, 1871. Address G. L. Wild& Bro., 420 11th St., Washington, D. C.

Boston Fire! Goodnow & Wightman, 23 Cornhill, were not burned out, and are ready to fill all orders for Tools and Materials. Catalogues were all burned, but will have more in about two weeks:

First Class Steam and Vacuum Gauges, Engine Registers, Davis' Recording Gauges. New York Steam Gauge Co., 46 Cortlandt St., N.Y. Kahnweiler's Cotton Seed Huller, \$175. Is warranted perfect in its operation. Send stamp for circular to R. H. Allen & Co., New York, manufacturers and dealers in Agricultural Machinery of every kind.

Four Brick Machines, Combined with Steam Power (Winn' patent), makes 40 M. per day, for sale at a bargain. Address the manufacturers, John Cooper and Co., Mount Vernon, Ohio.

Absolutely the best protection against Fire—Babcock Extinguisher. F. W. Farwell, Secretary, 407 Broadway, New York.

Hydraulic Jacks and Presses—Second Hand Plug Tobacco

Machinery. Address E. Lyon, 470 Grand St., New York.

Steam Boiler and Pipe Covering—Economy, Safety, and Durability. Saves from ten to twenty per cent. Chalmers Spence Company,

Steel Castings "To Pattern," from ten pounds upward, can beforgedand tempered. Address Collins & Co., No. 212 Water St., N. Y.

foot East 9th Street, New York-1202 N. 2d Street, St. Louis

Heydrick's Traction Engine and Steam Plow, capable of ascending grades of 1 foot in 3 with perfect ease. The Patent Right for the Southern States for sale. Address W.H.H.Heydrick, Chestnut Hill, Phila.

The Berryman Steam Trap excels all others. The best is always the cheapest. Address I. B. Davis & Co., Hartford, Conn.

Peck's Patent Drop Press, Milo Peck & Co., New Haven, Ct.

Wanted—Copper, Brass, Tea Lead, and Turnings from all parts of the United States and Canada. Duplaine & Reeves, 760 South Broad Street, Philadelphia, Pa.

The Berryman Heater and Regulator for Steam Boilers—No one using Steam Boilers can afford to be without them. I. B. Davis & Co.

T. R. Bailey & Vail, Lockport, N. Y., Manf. Gauge Lathes.

For 2, 4, 6 & 8 H.P. Engines, address Twiss Bro., New Haven, Ct.

The Decremen Manuf. Complex a gradular of the company

The Berryman Manuf. Co. make a specialty of the economy and safety in working Steam Boilers. I. B. Davis & Co., Hartford, Conn.

Williamson's Road Steamer and Steam Plow, with Rubber Tires.Address D. D. Williamson, 32 Broadway, N. Y., or Box 1809.

Belting as is Belting—Best Philadelphia Oak Tanned. C. W Arny, 301 and 303 Cherry Street, Philadelphia, Pa.

Boynton's Lightning Saws. The genuine \$500 challenge Will cut five times as fast as an ax. A six foot cross cut and buck saw, \$6. E. M. Boynton. 80 Beekman Street. New York. Sole Proprietor.

For Steam Fire Engines, address R. J. Gould, Newark, N. J.

Brown's Coalyard Quarry & Contractors' Apparatus for hoisting and conveying material by iron cable. W.D. Andrews & Bro.414 Water st.N.Y. For Solid Wrought-iron Beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa., for lithograph, etc.

All kinds of Presses and Dies. Bliss & Williams, successors to Mays & Bliss, 118 to 122 Plymouth St., Brooklyn. Send for Catalogue. Mining, Wrecking, Pumping, Drainage, or Irrigating Machinery, for sale or rent. See advertisement, Andrew's Patent, inside page.

Presses, Dies & all can tools. Ferracute Mch. Wks, Bridgeton, N.J. Gear Wheels for Models. Illustrated Price List free. Also Materials of all kinds. Goodnow & Wightman, 23 Coruhill, Boston, Mass.

Machinists; Illustrated Catalogue of all kinds of small Tools and Materials sent free. Goodnow & Wightman, 23 Cornhill, Boston, Mass.

Gatling guns, that fire 400 shots per minute, with a range of over 1,000 yards, and which weigh only 125 pounds, are now being made at Colt's Armory, Hartford, Conn.

A New Machine for boring Pulleys, Gears, Spiders, etc. etc. No limit to capacity. T. R. Bailey & Vail, Lockport, N. Y.

Winans' Boiler Powder, 11 Wall St., New York. Certain cure for Incrustations—17 years best in the market.



[We herewith present a series of inquiries embracing prariety of topics of greater or less general interest. The questions are-simple, it is true, but we prefer to elicit practical answers from our readers.]

1.—Is there any good fastening for rubber belts? All the fron fastenings that I have tried are only failures; and in common lacings, the oil used in dressing the leather spoils the belts.—J. E. S.

2.—Will some one inform me of a good and quick method of hardening hydraulic cement pipes, or concrete, which will not kill the natural petrifying process ?—A. H. B.

3,—I have noticed that trees, struck by lightning, were never split if the bark was torn off, but have found them to subsequently split. Why are lightning rods twisted when struck? Why does lightning that coils round an object never do any damage?—J. C. S.

4.—Have there ever been scales constructed which will weigh correctly, pounds and ounces, at any temperature, through other means than the changeable weight at a fixedpoint, or the sliding weight and beam? If so, how are they constructed and what is the reason they are not in general use? Scales with springs seem to be unreliable; besides they answer the purpose only to a certain extent, as they do not weigh more than thirty or forty pounds.—A. B.

5.—H. A. S., of Hiogo, Japan, says:—I am an habitual smoker, and have often noticed, when enjoying a pipe or a cigar, that the smoke which tobacco produces changes its color during inhalation, that which escapes from the bowl of the pipe or end of cigar being of a bluer color than that which is puffed out of the mouth. I attribute this to the condensation of some one of the component parts of the smoke. I should be much obliged if some one would kindly inform me if I am correct, and if so, what is it that is condensed, and what condenses it?

6.—How can I get the hardest edge on a plate of cast iron or steel, or even wrought iron? What I want is a plate of strongmetal, say half an inch thick, with one side say 1-16 deep, of the hardest metal to be got for an edge, to work in the ground or gravel, and still strong enough to stand some concussion. Will case hardening do? Can cast steel be case hardened to it? Also, can you tell me who is the original inventor of the vacuum steam pump?—H. B.



SPECIAL NOTE.—This columnis designed for the general interest and instruction of our readers, not for fratuitous replies to questions of a purely business or personal nature. We will publish such inquiries, however, when paid for as advertisements at \$1.50 a line, under the head of "Business and Personal."

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

E. T. N. of Pa.—The mineral you send is iron pyrites—sul phur and iron.

B. J. K., of Ga., will find methods for curing his gun of its propensity to scatter fully described on pp. 42, 58, 74, 107 of our volume XXVI.

F. H. J. asks for practical directions for making bibulous paper for drying crystals, and for making salts of copper, cobalt, and silver. The paper can only be made in a paper mill, and common blotting paper will answer the purpose. The salts of metals can be purchased for very much less than they can be made. Consult any good chemistry for the processes.

C. Y. asks:—Will you please tell me through your paper what the difference is between a salinometer and a hydrometer? Answer: In principle, none. The salinometer is a glass tube graded specially for salt water, to indicate different degrees of saltness. A hydrometer is a similar instrument graded to indicate the specific gravity of any liquid in which it is placed.

J. A. S., of Ohio, says:—Will you please inform me how brass fitters obtain the beautiful finish for brass work usually seen on gas fixtures? I believe it is called dip lacquer finish. Please give the ingredients and proportion, and, if possible, the mixture of brass which produces the best results. Answer: The finish is obtained by dipping the article in nitric acid, a special quality called dipping acid being sold for the purpose. After dipping, the article is varnished. As to the metal, any brass founder willgive you that. It varies with the intended use of the casting. Fine yellow brass is composed of 66 parts of copper and 34 parts of zinc.

F. R. says:—Will you please tell me whether the diamonds used in the diamond drill are a manufactured article? A friend tells me they are so, but I think they are the true black diamond. Answer: The diamonds used in drills and stone saws are not manufactured. By no process at present known can the qualities of the diamond be imitated. The diamonds used in drills are known here as black diamonds, and have the appearance of close grained coal. This substance is termed by dealers carbonado, and appears to occupy a place between anthracite coal and the real diamond, having the hardness of the latter. The carbonado is found in Siberia and Brazil.

J. M. says:—I saw a reply to a correspondent concerning the old wheel question, and send this to say that, if you have no objection, after having expressed an unwillingness to admit discussion on that subject at this time, I will say to D. W. S., not only what I think, but exactly how it can be proved that, as per construction of the question, the wheel makes only one revolution; and this I will do with an article no longer than your reply to D. W. S., on page 330 in your last issue, with a few rings for a diagram. Please therefore to say to J. M. how you like my proposition. Should a discussion follow you are not required, you know, to take sides, if not so disposed. Answer: We should be very glad to re-open the wheel discussion if we were not fully satisfied that it could lead to no good resuit. The very same diagrams by which our correspondent thinks he can conclusively prove the one revolution, can be used by the two revolution people to establish the correctness of their ideas. In the course of the former discussion, we frequently received similar models and similar diagrams from opponents for the purpose of proving their

C. C., of Michigan, says:—I want to know if an air pump will take suction from the exhaust of a steam engine and force the steam into a rotary boiler for paper manufacture, creating a pressure of one hundred pounds to the square inch? Also, would such a pressure have the ordinary heat that one hundred pounds pressure has in an ordinary steam generator? Answer: Anair pump would accomplish the object intended, but, to condense by compression to the extent indicated, would require it to be made very strong, would absorb very great power, and we should be inclined to expect it to prove an unprofitable experiment. Were the experiment made and the full pressure attained, the temperature of th steam would be the same as in the steam boiler at the same pressure, viz 3378° Fahrenhelt, with steam per gage at one hundred pounds per square inch. We should anticipate that it would be found far less expensive to take prime steam from the boiler at the desired pressure and temperature than to compress the exhaust steam as proposed.

In reply to H. E. C., query 2, page 345, I would say that faded writing can be restored by rubbing over with tincture of galls.—F. H. J., of N. Y.

To W. G. Blish, page 340.—A belt can be shifted with the loose pulley on the driving shaft if the driven shaft has a momentum that will keep it in motion until the belt is completely shifted, not otherwise. Also, crossed belts never run so well as straight ones. Better obtain more pulley surface by increasing the size of both pulleys, giving greater belt speed—a double gain. It is difficult to make a belt leave a tight for a loose pulley if the latter is much the smaller, but a slight difference is good practice.—J. E. S.

To B.S.P., query 3, page 345.—Make a solution of gutta percha in bisulphide of carbon, apply a coat or two around the leak in your gas bag; put also a coat or two on a thin piece of leather. Now warmthe two coated surfaces, and at once press firmly together.—E. H. H., of Mass.

To H. E. C., query 2, page 345.—Faded ink can usually be restored. Try brushing over the writing a dilute solution of sulphuric acid to which a few drops of nitric acid have been added. When dry, brush over a dilute solution of prussiate of potash; the faded writing will exhibit a blue color, which will deepen on exposure. Or brush over the writing some solution of hydrosulphuret of ammonium, which by age and exposure has become yellow, and the writing will become black. Don't be astonished at the pleasant smell of this last plan.—E. H. H., of Mass.

To B. S., query 3, page 345.—Air slaked lime will not do for making lime cylinders. Take lumps of nice soft chalk, and cut out or turn your cylinders; place in a crucible together with some powdered chalk, submit to a bright red heat for an hour or two, and you will have as nice lime as you can wish.—E. H. H., of Mass.

To I. W. C., query 4, page 345.—To a solution of nitrate of silver, add solution of cyanide of potassium until no further precipitate is formed; allow it to settle and pour off the clear liquor. Dissolve the sediment in enough solution of cyanide of potassium and form into a paste with prepared chalk. Rub some of this paste on your brass. or copper, or Germansilver, etc., and you will have a nice thin deposit of silver, of course not so thick or durable as if deposited by a battery. Be careful of the cyanide, as it is deadly poison, and do not let it get near a scratch.—E. H. H.. of Mass.

Becent American and Horeign Latents.

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

ROTARY STOOL.—George H. Spencer, Fitchburg, Mass.—This invention has for its object to improve the construction of rotary office stools, chairs, etc., and it consists in the cylindrical nut or spider made with radial arms, having longitudinal sockets formed in their outer ends, and in the legs or posts with their upper ends bent inward to enter the longitudinal sockets of the spider.

SLEEPING CAR.—William E. Gowdy, Waldron, N. Y.—This invention has for its object to improve the construction of sleeping cars in such a way that each berth may be closed as securely as a state room. When the panels are turned down upon the bottoms of the seats, and the cushions replaced upon said seats, the panels will be entirely out of the way. By this construction, also, all the parts that require to be detached and removed are certain partitions. This construction makes the berths or compartments of a sleeping car become as secure as a state room, and the occupant, when he has bolted the panels upon the inside, can sleep in safety,

DUMPING CAR.—John R. Dubois, Virginia City, Nevada.—This invention relates to improvements in the class of dumping cars in which the box is hinged and pivoted so as to be turned horizontally and also be tilted toward eitherside or end of the track; and it consists in the peculiar arrangement of locking devices for preventing the box from swinging around on the turn table at the same time that it is held from tilting.

FIREPROOF FLOOR AND CEILING.—George H. Johnson and Edwin R. Hall, Chicago, Ill.—The invention relates to a mode of forming a fireproof floor and celling by means of slabs and hollow tiles of burnt clay, plaster of Paris, or other incombustiblematerial, applied to the upper and under side, respectively, of timber joists, the slab being of rectangular form and secured by the same devices as the floor boards which are laid thereon, and the tiles being of prismoidal shape and provided with flanges to adapt them to cover and also be supported by strips attached to the sides of the joists.

CAR COUPLING.—Perry Brown, Louisville, Ky.—The invention is an improvement on that recently patented to same party. The link acts, as in that case, on a pivoted support for the coupling pin, so that the latter drops into its place as the cars come together. In this instance, the coupling pin is extended vertically to the top of the car, and is provided with a curved arm to act on a radial arm or projection of a similar extension of the shaft of the valve or said pivoted support, so that, the coupling pin being first raised, the support may be caused to move under it and thus place the coupling in readiness for automaticaction without necessity for the operator to enter between the cars or descend from them for that purpose.

MEANS OF PROPULSION.—Seth R. Foster, St. John, Canada.—This invention relates to a new paddle attachment to steam engines for propelling wessels of various sizes, and consists in suspending the paddles directly from the ends of the walking beams of the propeller. The inventor proposes to impart the requisite vibratory motion to the beam by a jointed rod connection with a crank shaft, and to rotate the crank shaft by the pistons of two steam cylinders. The vibrations of the beam on its pivot serve to impart up and down motion to the dashes and paddles; but the horizontal sweep is imparted to the same by means of rods which connect them respectively with the cranks of the shaft. The invehtion can also be used for canal boats, in which case the propeller is placed on the bow or stern by a little alteration in its construction, namely, by having two walking beams instead of one, the sweeps attached to one end instead of both, and propelling machinery attached to the other end of each beam.

MILK COOLER.—Irving Wheeler, of Massena, N.Y.—This invention relates to an improved milk cooler by which a small quantity of water can be made to absorb nearly all the animal heat of the milk for the purpose of preparing it for market or for churning. The invention consists in the arrangement of a spiral water chamber beneath the milk pan for obtaining a large circulating channel, and, consequently, fully utilizing the heat absorbing qualities of the water.

INSOLE FOR BOOTS AND SHOES.—Garett H. Whittaker, Pittsfield, Mass., assignor to himself and Jacob Stewart, of same place.—This invention relates to a new insole for boots and shoes, with the object of keeping the feet warm by its use and of curing and preventing chilblains and other unpleasant and injurious diseases caused by cold feet. The invention consists in making the sole of three thicknesses of material, of which the lower is rubber cloth, the middle, palm leaf steeped in sulphur solution, and the upper, carpet.

Clothes dryer, G. W. Palge.....

SEED PLANTER.-John H. Dancy, of Dancyville, Tenn.-This invention relates to the class of seed planters in which the amount of seed required for a hill is elevated within the seed hopper and discharged through a hole in the upper part of the hopper into the drop tube. The object of the invention is to insure the planting of the requisite amount of seed at proper intervals and without injury to the seed. The invention consists in the use and new arrangement, with the vertical slide which elevates the seed to be dropped to the hole in the upperpart of the hopper, of a cut-off, and other appurtenances which are necessary in order to make the slide effective.

SASH HOLDER.-William Wilson Amos, of Olathe, Kansas.-This invention has for its object to improve the construction of the sash holder and lock for which letters patent No. 125,161 were issued April 2, 1872. The invention consists in a hinged box made inclined or tapering, and in it is placed loosely a small box, in which is placed a tapering rubber block. The box and its contents are held out against the casing by the spring. With this construction, when the sash is being lowered, the friction of the window casing upon the rubber block forces the said rubber block and its sliding box or case upward into the shallower part of the tapering box so that the rubber block will hug the casing and thus support the sash by friction.

STEAM EXHAUST FOR LOCOMOTIVES .- Thomas Davies, of Cleveland, Ohio -This invention relates to an improvement in the means for supporting the ring jet pipes through which the steam is exhausted in certain marine boil ers. An upright pipe, which is tapered and open at each end, forms a support for the ring exhaust pipe at any point in its hight, according to the predetermined size of the said ring and the point of its insertion in the smoke box.

SAWING MACHINE.—William C. Daniel, of Point Pleasant, Mo.—This invention relates to a new reciprocating buck aw, in which the saw frame and carriage are vertically adjustable and suspended from a windlass which unwinds automatically by means of an escapement attachment, so that the downward feed of the saw will be regular and gradual.

FORM FOR LAYING BRICK PAVEMENTS .- Samuel C. Brewer, of Water Valley, Miss.—This invention is embodied in a device for gaging the bricks for laying "herring-bone" pavement, calculated to insure regularity in the work. It consists of a brick paving gage, having right angled notches in one edge as deep as the longest bricks, and whose sides are arranged on angles of forty-five degrees with the long axis.

ELEVATED WIRE WAY .- George Killam, of Fort Dodge, Iowa .- This invention tion has for its object to furnish an improved construction for elevated railroads. The track is supported by two rows of posts, at a distance apar equal to the width of the track. The upper ends of the posts are atted into and secured to castings which are made heavy and strong, and grooved transversely in the middle part of their upper sides with a deep and wide groove. The upper sides of the castings have grooves formed in them, of such a depth and breadth as to receive the flanges of the wheels of the car. The tops of the ribs between the longitudinal grooves of the casting are grooved sufficiently to bed the wires which form the track and are secured to the castings. The axles pass beneath the bottom of the carup along its sides, and project to receive the wheels at such a point that the center of gravity of the carmay be considerably below the point of support. Directly beneath the upper wires are placed a second set of wires, the ends of which pass through the body of the castings. The shoulder upon the inner side of the castings, through which the inner wire passes, is made wide and is grooved longitudinally to receive the flange of the lower wheel. The ower wheels revolve upon the journals of arms which are formed upon the axles and project into such a position that the wheels may roll along the lower side of the inner wire and thus effectually prevent the upper wheels from leaving the wires.

ORE CLEANER AND SEPARATOR.-John H. Hillman, of Trigg Furnace, Ky. This invention has for its object to furnish an improved machine for separating or cleaning ore by a current or blast of air. The ore after being crushed to the desired fineness is delivered into the hopper by any suitable means, and is fed into a cylinder which, by its motion, keeps the ore rolling and sliding about, causing it to pass down to the lower end of said cylinder This movement of the ore rubs off the dirt and dust, which is carried out through the cylinder, pipes, and fan by and with the current of air. The smaller particles of ore will pass through the holes of the cylinder while the larger particles will be carried down to the ore receiving box. When the ore has sufficiently accumulated in the box, it will be discharged into any suitable receptacle provided for that purpose. A jacket is made to fit the cylinder at its ends and at its side edges, to prevent a current of air from passing in through the holes in the upper part of the said cylinder, thus making the current of air strong in the lower part of the cylinder where the small particles of ore must pass through.

ADJUSTABLE SCAFFOLD.-William A. Jester, of Holliday's Cove, W. Va. -The object of this invention is to furnish safe and convenient means for supporting house builders and painters with their materials and implement the sides of buildings. It consists of a scaffold made of two uprights on which slides a triangular bracket. The platform upon which the workmen stand is supported by the bracket. In the top of the upright is a pulley. A clamp consisting of two or more jaws is attached to a horizontal This bar is confined to the upright, so that it can slide up and down. One jaw (or pair of jaws) is rigidly fastened to the bar. The other jaw (or pair of jaws) operates as a lever, and the two are pivoted together and act much like a pair of pinchers. A rope is connected with the lower end of the jaw. This clamp, it will be seen, can be raised or lowered so a to be grappled on to roofs or projections of different hightsfrom the ground Two or more of the uprights with bracket and clamp attached are em ployed in supporting the platform.

Last.-Joseph Anzer, of Ashtabula, Ohio.-The invention consists in providing means for locking the two parts of a last against lateral as well as vertical displacement.

PACKING BOARD FOR PENCILS.-Orestes Cleveland, of Jersey City, N. J. This invention has for its object to produce a compact and symmetrical package of lead pencils, pen holders, crayons, or similar articles. A piece of wood or othermaterial is inserted between the pencils that constitute a package, the inserted piece being grooved for each pencil to hold it firm in dependent of the other pencils. The inserted piece also serves to enlarge the package so as to produce a large surface for the admission of a showy label. This device is so constructed that it enables the retailer to withdraw several pencils from a package without losing the use of the label, the package still retaining its shape.

Machine for Turning Logs in Saw Mills.—George W. Baker, Elizabeth City, N. C.-This invention consists in the provision of a sliding carriage moving horizontally in ways or guides beneath the log deck and carrying a vertically reciprocating toothed turning bar, so as to enable the same to be horizontally adjusted for action upon logs of various lengths. The invention further consists in the combination with the movable carriage of a sliding silf-adjusting weighted block for exerting a constant pressure upon the turning bar to hold the same in contact with the log.

MANUFACTURE OF SALT.—John McGrew, Ravenswood, W. Va.—The invention consists in providing the inside of a furnace with an air jacket and discharging the heated air into the bottom of a vessel of brine or salt water; in passing the unconsumed products of combustion through vessel of brine or salt water, thereby abstracting the heat and utilizing it for the general purpose of the apparatus; and finally, in a drying apparatus of such construction and so connected with the furnace that the salt is conveniently as well as effectually dried before it leaves the apparatus.

MEDICAL COMPOUND FOR THE CURE OF DIARRHEA.-Mrs. A. B. Dorman, Cape Girardeau, Mo.-The invention consists in red oak bark, cinnamor cloves, dandelion root, and brandy mixed in certain proportions with boiling water. This compound has been applied to the most obstinate case with a prompt and marked effect, the diarrhox yielding to the treatment in

CAR COUPLING .- Darius Sutherland, Milo, Ill .- The invention relates to that special class of car couplings which are made to couple the cars automatically or by impact, and it consists in attaching the pinto a lever and weighted lift bar, arranged outside of the draw head and above the platform of car; whereby a projection from the top of one car is made to strike the lift-bar, whose weight turns the lever on its fulcrum and carries down the pin into the link,

WHIFFLETREE FOR DETACHING HORSES FROM VEHICLES.—Albert H. McAl- Closet, earth, G. H. Vroom. lister, Cotton Plant, Miss.—This invention has for its object to furnish an improved whiffletree, which shall be so constructed that should the horse or horses become frightened orotherwise unmanageable, or should other cause or causes render it advisable, they may be readily detached from the carriage and allowed to go free.

Tubing Tongs.-George A. Holden, Ruggville, Pa., assignor to himself and J. R. Holden, of same place.—Thisinvention has for its object to furnish an improved tubing tongs or pipe wrench, designed especially for taking tubing out of and putting it into wells, and which shall be so constructed as to take a prompt and firm hold upon the pipe, and so as to enable two men to operate with the same tongs, thus avoiding the necessity of using two ordinary tongs, and the consequent risk of injury to the tubing.

ADDRESS PLATE FOR TRUNKS .- James E. Kirk, Marlborough, Mass .- This invention relates to a new construction of address plates for trunks, boxes, etc., in which the paper, slate, or other substance upon which the address is written is held beneath a small pane of glass by a hinged frame, said frame being locked by notched disks, to be unlocked and swung open whenever the address is to be changed. The plate in which the hinged frame and the notched disks are arranged is rigidly fastened to the trunk or box, and may further serve as a support for a handle.

CHECK PUNCH.—José R. Mesa, Brooklyn, N. Y.—This invention has for its object to produce an instrument for punching the number or amount to which checks or similar documents of value are drawn through the same and feeding the same forward to obtain the necessary spaces between the figures punched. It consists in a rotary cylinder with a series of vertical punches that represent the several figures and characters to be punched through the paper. The cylinder can be turned so as to bring any one of the punches under a knob or button, which, when struck by hand, forces the punch under it against the paper to perforate the same in the desired man er. Each punch is provided with a pendant by which, in its descent, it will work a pawl and ratchet, and thereby turn one of the rollers between which the paper is held to feed the paper in the requisite ratio.

BOTTLE RINSER.-James Roue, St. John, Canada.-The object of this invention is to provide convenient and efficient means for rinsing soda water and other bottles, tumblers, and similar vessels. It consists in the valve chamber or shell, consisting of a vertical tube with one or more branches, for attaching a supply pipe from the water fountain. The rinser is sup ported in any suitable manner in a sink. The lower end of the valve rod is connected with a paddle, by means of which the valve is lowered, The valve is held in position (or closed) by the spiral springs which surround the valve rod, with one end bearing against the valve and the other on the bottom of the valve chamber. With the water supply pipe connected with either of the branches and with a sufficient head of water, when the valve is pressed down the water will rush into the tube and be discharged from a rose head with a force proportioned to the hight of the head of water. This will effectually rinse the insides of sbottles, tumblers and all similar vessels, when the tube is inserted therein.

TOOL REST FOR LATHES.-Charles F. Hadley, Chicopee, Mass.-The invention consists in the combination of a horizontal screw and nut with an inclined lever, which supports the tool rest, and which determines the hight of the same by its greater or less inclination. By this means the rest can be adjusted with great ease, and will set the tool to suitable hight without disturbing it otherwise. Heretofore the tools had usually to be loosened in their holders before they could be vertically adjusted, and were thereby often disturbed after their positions otherwise had been ascertained with thus causing much loss of time and labor. This invention may be found illustrated on page 274, present volume Scientific American.

Tongueing and Grooving Knife.—William B. McClain, Sandusky, Ohio. This invention has for its object to make tongueing and grooving knives adjustable, so as to enable their use for larger or smaller tongues, deeper o shallower grooves, without requiring their removal from the cutter head. This invention consists in making each cutter in three parts, the middle pro jecting or receding part being lengthwise adjustable between the others.

[OFFICIAL.]

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Oil cake trimmer, W. Hawes. Oil cans, stopper for, E. C. Godwin. Oils and paints, box and can for, Everest and Ross Ornaments, method of producing metal, W. Henigst. Paper feeding device, A. A. Dunk. Paper bags, machine for making, C. F. Annan. Paraffin, treatment and purification of, Letchford and Nation. Pavement, wood, H. G. McGonegal. Photograph mount, A. C. Partridge, (reissue). Pinion, reversible watch, N. Staffin. Piston packing, G. W. Reisinger. Planter, corn, J. Rice. Plow, gang, C. Kewin. Potato digger, J. P. Radley. Preserving and packing box, B. Yaw. Printing machine, electrical, T. A. Edison. Printing presses, feed board for, E. Allen. Projectile, sub-caliber, E. A. Dana. Pump, oscillating, W. Painter. Quartz mills, tappet for, B. McCauley. Railroad rail joint, J. McL. Staughton. Railway cross tie, D. C. Kellam. Rake, horse hay, J. H. Bullard. Rudder, R. H. Thomas. Sail, reefing, West and Smith. Sash fastener, C. C. Algeo. Sash fastener, window, C. Partello. Saw, N. Johnson. Saw frame, W. Hankin, Sr. Saw mill, D. Cilley. Saw blades, machine for grinding, C. H. Colby.	133,02 132,95 132,90 132,90 133,04 133,04 133,05 132,91 133,04 132,92 133,00 133,01 132,91 132,99 13
Oil cake trimmer, W. Hawes. Oil cans, stopper for, E. C. Godwin. Oils and paints, box and can for, Everest and Ross Ornaments, method of producing metal, W. Henigst. Paper feeding device, A. A. Dunk. Paper bags, machine for making, C. F. Annan. Paraffin, treatment and purification of, Letchford and Nation. Pavement, wood, H. G. McGonegal. Photograph mount, A. C. Partridge, (reissue). Pinion, reversible watch, N. Staffin. Piston packing, G. W. Reisinger. Planter, corn, J. Rice. Plow, gang, C. Kewin. Potato digger, J. P. Radley. Preserving and packing box, B. Yaw. Printing machine, electrical, T. A. Edison. Printing presses, feed board for, E. Allen. Projectile, sub-caliber, E. A. Dana. Pump, oscillating, W. Painter. Quartz mills, tappet for, B. McCauley Railroad rail joint, J. McL. Staughton. Railway cross tie, D. C. Kellam. Rake, horse hay, J. H. Bullard. Rudder, R. H. Thomas. Sail, reefing, West and Smith. Sash fastener, C. C. Algeo. Sash fastener, window, C. Partello. Saw, N. Johnson. Saw frame, W. Hankin, Sr. Saw mill, D. Cilley. Saw blades, machine for grinding, C. H. Colby Screw, wood, J. S. Armstrong. Screw cutting machine, C. E. Langmaid. Sewing machine, C. E. Langmaid.	133,02 132,95 133,02 132,99 133,04 133,05 133,05 132,98 133,05 132,98 133,07 132,99 133,07 13
Oil cake trimmer, W. Hawes. Oil cans, stopper for, E. C. Godwin. Oils and paints, box and can for, Everest and Ross Ornaments, method of producing metal, W. Henigst. Paper feeding device, A. A. Dunk. Paper bags, machine for making, C. F. Annan. Paraffin, treatment and purification of, Letchford and Nation. Pavement, wood, H. G. McGonegal. Photograph mount, A. C. Partridge, (reissue). Pinion, reversible watch, N. Staffin Piston packing, G. W. Reisinger. Planter, corn, J. Rice. Plow, gang, C. Kewin. Potato digger, J. P. Radley. Preserving and packing box, B. Yaw. Printing machine, electrical, T. A. Edison. Printing presses, feed board for, E. Allen. Projectile, sub-caliber, E. A. Dana. Pump, oscillating, W. Painter. Quartz mills, tappet for, B. McCauley Railroad rail joint, J. McL. Staughter. Railroad rail joint, J. McL. Staughton. Rallway cross tie, D. C. Kellam. Rake, horse hay, J. H. Bullard. Rudder, R. H. Thomas. Sail, reefing, West and Smith Sash fastener, C. C. Algeo. Sash fastener, window, C. Partello. Sash fastener, window, C. Partello. Saw, N. Johnson. Saw frame, W. Hankin, Sr. Saw mill, D. Cilley. Saw blades, machine for grinding, C. H. Colby. Screw, wood, J. S. Armstrong. Screw cutting machine, d. J. Grant. Sewing machine, d. E. Langmaid. Sewing machines, driving mechanism for, I. P. Fishburn. Sheet metal ware, bottoming, W. C. Bruson.	133,02 132,95 132,90 132,90 133,04 133,05 133,05 133,05 132,91 133,00 133,00 133,00 132,90 133,00 13
Oil cake trimmer, W. Hawes. Oil cans, stopper for, E. C. Godwin. Oils and paints, box and can for, Everest and Ross Ornaments, method of producing metal, W. Henigst. Paper feeding device, A. A. Dunk. Paper bags, machine for making, C. F. Annan. Paraffin, treatment and purification of, Letchford and Nation. Pavement, wood, H. G. McGonegal. Photograph mount, A. C. Partridge, (reissue). Pinion, reversible watch, N. Staffin. Piston packing, G. W. Reisinger. Planter, corn, H. A. Ridley. Planter, corn, J. Rice. Plow, gang, C. Kewin. Potato digger, J. P. Radley. Preserving and packing box, B. Yaw. Printing machine, electrical, T. A. Edison. Printing presses, feed board for, E. Allen. Projectile, sub-caliber, E. A. Dana. Pump, oscillating, W. Painter. Quartz mills, tappet for, B. McCauley. Railroad rail joint, T. Slaughter. Railroad rail joint, J. McL. Staughton. Railway cross tie, D. C. Kellam. Rake, horse hay, J. H. Bullard. Rudder, R. H. Thomas. Sail, reefing, West and Smith. Sash fastener, C. C. Algeo. Sash fastener, window, C. Partello. Saw, N. Johnson. Saw frame, W. Hankin, Sr. Saw mill, D. Cilley. Saw blades, machine for grinding, C. H. Colby. Screw, wood, J. S. Armstrong. Screw cutting machine, J. J. Grant. Sewing machines, driving mechanism for, I. P. Fishburn. Sheet metal ware, bottoming, W. C. Bruson. Spinning machine, M. Stell.	133,02 132,95 133,02 132,90 132,90 133,02 133,02 133,02 133,02 133,03 133,01 133,00 133,01 133,00 133,01 133,00 133,01 132,99 132,96 133,03 13
Oil cake trimmer, W. Hawes. Oil cans, stopper for, E. C. Godwin. Oils and paints, box and can for, Everest and Ross Ornaments, method of producing metal, W. Henigst. Paper feeding device, A. A. Dunk. Paper bags, machine for making, C. F. Annan. Paraffin, treatment and purification of, Letchford and Nation. Pavement, wood, H. G. McGonegal. Photograph mount, A. C. Partridge, (reissue). Pinion, reversible watch, N. Staffin. Piston packing, G. W. Reisinger. Planter, corn, J. Rice. Plow, gang, C. Kewin. Potato digger, J. P. Radley. Preserving and packing box, B. Yaw. Printing machine, electrical, T. A. Edison. Printing presses, feed board for, E. Allen. Projectile, sub-caliber, E. A. Dana. Pump, oscillating, W. Painter. Quartz mills, tappet for, B. McCauley Railroad rail joint, J. McL. Staughton. Railway cross tie, D. C. Kellam. Rake, horse hay, J. H. Bullard. Rudder, R. H. Thomas. Sail, reefing, West and Smith. Sash fastener, C. C. Algeo. Sash fastener, window, C. Partello. Saw, N. Johnson. Saw frame, W. Hankin, Sr. Saw mill, D. Cilley. Saw blades, machine for grinding, C. H. Colby Screw, wood, J. S. Armstrong. Screw cutting machine, J. J. Grant. Sewing machine, C. E. Langmaid. Sewing machines, driving mechanism for, I. P. Fishburn. Sheet metal ware, bottoming, W. C. Bruson Sjiteror pulverizer, W. C. Bruson Sjiteror pulverizer, W. C. Bruson Sjiteror palverizer, W. C. Bruson Sjitning machines, spindle and bobbin for, J. Roper.	133,02 132,95 132,90 132,90 132,90 132,90 133,00 13
Oil cake trimmer, W. Hawes. Oil cans, stopper for, E. C. Godwin. Oils and paints, box and can for, Everest and Ross Ornaments, method of producing metal, W. Henigst. Paper feeding device, A. A. Dunk. Paper bags, machine for making, C. F. Annan. Paraffin, treatment and purification of, Letchford and Nation. Pavement, wood, H. G. McGonegal. Photograph mount, A. C. Partridge, (reissue). Pinion, reversible watch, N. Staffin. Piston packing, G. W. Reisinger. Planter, corn, H. A. Ridley. Planter, corn, J. Rice. Plow, gang, C. Kewin. Potato digger, J. P. Radley. Preserving and packing box, B. Yaw. Printing machine, electrical, T. A. Edison. Printing presses, feed board for, E. Allen. Projectile, sub-caliber, E. A. Dana. Pump, oscillating, W. Painter. Quartz mills, tappet for, B. McCauley. Railroad rail joint, J. McL. Staughton. Railway cross tie, D. C. Kellam. Rake, horse hay, J. H. Bullard. Rudder, R. H. Thomas. Sall, reefing, West and Smith. Sash fastener, C. C. Algeo. Sash fastener, window, C. Partello. Saw, N. Johnson. Saw frame, W. Hankin, Sr. Saw mill, D.Cilley. Saw blades, machine for grinding, C. H. Colby. Screw, wood, J. S. Armstrong. Screw cutting machine, J. J. Grant. Sewing machine, C. E. Langmaid. Sewing machine, C. E. Langmaid Sewing machine, G. F. Bruson. Spinning machine, M. Stell. Spinning machine, M. Stell. Spinning machine, M. Stell. Spinning machine, spindle and bobbin for, J. Roper. Spike, H. Stibbs.	133,02 132,95 133,042 132,90 132,90 132,90 133,041 133,06 132,91 133,07 133,07 132,91 132,90 133,07
Oil cake trimmer, W. Hawes. Oil cans, stopper for, E. C. Godwin. Oils and paints, box and can for, Everest and Ross Ornaments, method of producing metal, W. Henigst. Paper feeding device, A. A. Dunk. Paper bags, machine for making, C. F. Annan. Paraffin, treatment and purification of, Letchford and Nation. Pavement, wood, H. G. McGonegal. Photograph mount, A. C. Partridge, (reissue). Pinion, reversible watch, N. Staffin. Piston packing, G. W. Reisinger. Planter, corn, J. Rice. Plow, gang, C. Kewin. Potato digger, J. P. Radley. Preserving and packing box, B. Yaw. Printing machine, electrical, T. A. Edison. Printing presses, feed board for, E. Allen. Projectile, sub-caliber, E. A. Dana. Pump, oscillating, W. Painter. Quartz mills, tappet for, B. McCauley. Railroad rail joint, T. Slaughter. Railroad rail joint, J. McL. Staughton. Railway cross tie, D. C. Kellam. Rake, horse hay, J. H. Bullard. Rudder, R. H. Thomas. Sail, reefing, West and Smith. Sash fastener, C. C. Algeo. Sash fastener, window, C. Partello. Saw, N. Johnson. Saw frame, W. Hankin, Sr. Saw mill, D. Cilley. Saw blades, machine for grinding, C. H. Colby. Screw, wood, J. S. Armstrong. Screw cutting machine, d. Stell. Spinning machines, driving mechanism for, I. P. Fishburn. Sheet metal ware, bottoming, W. C. Bruson. Spinning machines, spindle and bobbin for, J. Roper. Spilke, H. Stibbs. Spinning machines, spindle and bobbin for, J. Roper. Spike, H. Stibbs. Spinning machines, spindle and bobbin for, J. Roper. Spike, H. Stibbs. Spinning machines, E. P. Spaulding.	133,02 132,95 133,02 132,90 132,89 133,04 133,06 132,91 133,06 133,01 133,00 133,01 133,00 133,01 133,00 133,01 132,99
Oil cake trimmer, W. Hawes. Oil cans, stopper for, E. C. Godwin. Oils and paints, box and can for, Everest and Ross Ornaments, method of producing metal, W. Henigst. Paper feeding device, A. A. Dunk. Paper bags, machine for making, C. F. Annan. Paraffin, treatment and purification of, Letchford and Nation. Pavement, wood, H. G. McGonegal. Photograph mount, A. C. Partridge, (reissue). Pinion, reversible watch, N. Staffin Piston packing, G. W. Reisinger. Planter, corn, J. Rice. Plow, gang, C. Kewin. Potato digger, J. P. Radley. Preserving and packing box, B. Yaw. Printing machine, electrical, T. A. Edison. Printing presses, feed board for, E. Alien. Projectile, sub-caliber, E. A. Dana. Pump, oscillating, W. Painter. Quartz mills, tappet for, B. McCauley. Railroad rail joint, J. McL. Staughton. Railway cross tie, D. C. Kellam. Rake, horse hay, J. H. Bullard. Rudder, R. H. Thomas. Sail, reefing, West and Smith. Sash fastener, C. C. Algeo. Sash fastener, C. C. Algeo. Sash fastener, Window, C. Partello. Saw, N. Johnson. Saw frame, W. Hankin, Sr. Saw mill, D. Cilley. Saw blades, machine for grinding, C. H. Colby. Screw, wood, J. S. Armstrong. Screw cutting machine, J. J. Grant. Sewing machine, C. E. Langmaid. Sewing machines, driving mechanism for, I. P. Fishburn. Sheet metal ware, bottoming, W. C. Bruson. Sifter or pulverizer, W. C. Bruson. Spinning machines, driving mechanism for, J. P. Fishburn. Sheet metal ware, bottoming, W. C. Bruson. Sifter or pulverizer, W. C. Bruson. Spinning machines, spindle and bobbin for, J. Roper. Spike, H. Stibbs. Spirits, etc., apparatus for rectifying and distilling, E. F. Prentiss. Stave equalizer, E. P. Spaulding. Steam boiler alarm, J. H. and W. J. Killey. Steam boiler covering, J. D. Jones.	133,02 132,95 132,93 133,04 133,05 132,91 133,05 132,91 133,06 133,07 132,91 133,00 133,01 133,00 133,01 133,00 133,01 133,00 133,01 133,00 133,01 133,00 133,01 133,00 133,01 133,00 133,01 133,00 133,01 133,00 133,01 133,00 133,01 133,00 133,01 133,00 133,02 133,01 133,00 133,02 133,01 133,00 133,02 133,01 133,00 133,02 133,01 133,00 133,02 133,01 133,00 133,02 133,01 133,03 13
Oil cake trimmer, W. Hawes. Oil cans, stopper for, E. C. Godwin. Oils and paints, box and can for, Everest and Ross Ornaments, method of producing metal, W. Henigst. Paper feeding device, A. A. Dunk. Paper bags, machine for making, C. F. Annan. Paraffin, treatment and purification of, Letchford and Nation. Pavement, wood, H. G. McGonegal. Photograph mount, A. C. Partridge, (reissue). Pinion, reversible watch, N. Staffin. Piston packing, G. W. Reisinger. Planter, corn, J. Rice. Plow, gang, C. Kewin. Potato digger, J. P. Radley. Preserving and packing box, B. Yaw. Printing machine, electrical, T. A. Edison. Printing presses, feed board for, E. Allen. Projectile, sub-caliber, E. A. Dana. Pump, oscillating, W. Painter. Quartz mills, tappet for, B. McCauley. Railroad rail joint, J. McL. Staughton. Railway cross tie, D. C. Kellam. Rake, horse hay, J. H. Bullard. Rudder, R. H. Thomas. Sail, reefing, West and Smith. Sash fastener, C. C. Algeo. Sash fastener, window, C. Partello. Saw, N. Johnson. Saw frame, W. Hankin, Sr. Saw mill, D. Cilley. Saw blades, machine for grinding, C. H. Colby. Screw, wood, J. S. Armstrong. Screw cutting machine, J. Grant. Sewing machine, d. C. E. Langmaid. Sewing machine, d. C. Langmaid. Sewing machines, driving mechanism for, I. P. Fishburn. Sheet metal ware, bottoming, W. C. Bruson. Spinning machines, spindle and bobbin for, J. Roper. Spilke, H. Stibbs. Spilning machines, spindle and bobbin for, J. Roper. Spilke, E. Stibbs. Spilning machines, spindle and bobbin for, J. Roper. Spilke, E. C., apparatus for rectifying and distilling, E. F. Prentiss. Stave equalizer, E. P. Spaulding. Steam boiler alarm, J. H. and W. J. Killey. Steam boiler alarm, J. H. and W. J. Killey.	133,02 132,95 133,02 132,90 132,89 133,04 133,06 132,91 133,06 133,07 13
Oil cake trimmer, W. Hawes. Oil cans, stopper for, E. C. Godwin. Oils and paints, box and can for, Everest and Ross Ornaments, method of producing metal, W. Henigst. Paper feeding device, A. A. Dunk. Paper bags, machine for making, C. F. Annan. Paraffin, treatment and purification of, Letchford and Nation. Pavement, wood, H. G. McGonegal. Photograph mount, A. C. Partridge, (reissue) Plnion, reversible watch, N. Stafin Piston packing, G. W. Reisinger. Planter, corn, H. A. Ridley. Planter, corn, J. Rice. Plow, gang, C. Kewin. Potato digger, J. P. Radley. Preserving and packing box, B. Yaw. Printing machine, electrical, T. A. Edison. Printing presses, feed board for, E. Allen. Projectile, sub-caliber, E. A. Dana Pump, oscillating, W. Painter. Quartz mills, tappet for, B. McCauley Rallroad rall joint, J. McL. Staughton. Rallway cross tie, D. C. Kellam. Rake, horse hay, J. H. Bullard. Rudder, R. H. Thomas. Sail, reefing, West and Smith. Sash fastener, C. C. Algeo. Sash fastener, window, C. Partello. Saw, N. Johnson. Saw frame, W. Hankin, Sr. Saw mill, D. Cilley. Saw blades, machine for grinding, C. H. Colby Screw, wood, J. S. Armstrong. Screw cutting machine, J. J. Grant. Sewing machine, C. E. Langmaid Sewing machine, G. F. Langmaid Sewing machine, M. Stell. Spinning machine, Spindle and bobbin for, J. Roper. Spike, H. Stibbs. Spirits, etc., apparatus for rectifying and distilling, E. F. Prentiss. Stave equalizer, E. P. Spaulding. Steam boiler covering, J. D. Jones. Stereoscope, A. Quirolo. Store, machine for quarrying, E. Norton. Stove, fire place heating, H. R. Robbins, (reissue).	133,02 132,95 132,90 132,90 133,04 133,05 133,05 132,90 133,00 132,90 133,00 132,90 133,00 132,90 133,00 132,90 133,00 132,90 133,00 132,90 133,00 132,90 133,00 13
Oil cake trimmer, W. Hawes. Oil cans, stopper for, E. C. Godwin. Oils and paints, box and can for, Everest and Ross. Ornaments, method of producing metal, W. Henigst. Paper feeding device, A. A. Dunk. Paper bags, machine for making, C. F. Annan. Paraffin, treatment and purification of, Letchford and Nation. Pavement, wood, H. G. McGonegal. Photograph mount, A. C. Partridge, (reissue). Phinion, reversible watch, N. Staffin. Piston packing, G. W. Reisinger. Planter, corn, J. Rice. Plow, gang, C. Kewin. Potato digger, J. P. Radley. Preserving and packing box, B. Yaw. Printing machine, electrical, T. A. Edison. Printing presses, feed board for, E. Allen. Projectile, sub-caliber, E. A. Dana. Pump, oscillating, W. Painter. Quartz mills, tappet for, B. McCauley. Railroad rail joint, T. Slaughter. Railroad rail joint, J. McL. Staughton. Railway cross tie, D. C. Kellam. Rake, horse hay, J. H. Bullard. Rudder, R. H. Thomas. Sail, reefing, West and Smith. Sash fastener, C. C. Algeo. Sash fastener, window, C. Partello. Saw, N. Johnson. Saw frame, W. Hankin, Sr. Saw mill, D. Cilley. Saw blades, machine for grinding, C. H. Colby. Screw, wood, J. S. Armstrong. Screw cutting machine, J. J. Grant. Sewing machine, G. E. Langmald Sewing machine, M. Stell. Spinning machines, driving mechanism for, I. P. Fishburn. Sheet metal ware, bottoming, W. C. Bruson. Spinning machines, driving mechanism for, J. Roper. Spike, H. Stibbs. Spirits, etc., apparatus for rectifying and distilling, E. F. Prentiss. Stave equalizer, E. P. Spaulding. Steam boiler alarm, J. H. and W. J. Killey. Steam boiler alarm, J. H. and W. J. Killey. Steam boiler covering, J. D. Jones. Stereoscope, A. Quirolo. Stone, free place heating, H. R. Robbins, (reissue).	133,02 132,95 132,93 132,93 133,04 133,05 132,91 133,06 132,91 133,07 132,91 133,07 132,91 133,07 132,91 132,93 133,07 132,94 132,94 133,07 132,94 132,94 132,95 132,94 132,95 132,94 132,95 13
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Oil cake trimmer, W. Hawes. Oil cans, stopper for, E. C. Godwin. Oils and paints, box and can for, Everest and Ross. Ornaments, method of producing metal, W. Henigst. Paper feeding device, A. A. Dunk. Paper bags, machine for making, C. F. Annan. Paraffin, treatment and purification of, Letchford and Nation. Paramin, treatment and purification of, Letchford and Nation. Prison packing, G. W. Relsinger Planter, corn, H. A. Ridley. Planter, corn, J. Rice. Plow, gang, C. Kewin. Potato digger, J.P. Radley. Preserving and packing box, B. Yaw Printing machine, electrical, T. A. Edison. Printing presses, feed board for, E. Allen. Projectile, sub-caliber, E. A. Dana. Pump, oscillating, W. Painter. Quartz mills, tappet for, B. McCauley. Railroad rail joint, J. McL. Staughton. Railway cross tie, D. C. Kellam. Rake, horse hay, J. H. Bullard. Sash fastener, W. Hankin, Sr. Saw mill, D. Cilley. Sash fastener, window, C. Partello. Sash fastener, W. Hankin, Sr. Saw mill, D. Cilley. Serew, wood, J. S. Armstrong. Serew cutting machine, J. J. Grant. Sewing machines, driving mechanism for, I. P. Fishburn. Sheet metal ware, bottoming, W. C. Bruson. Sifter or pulverizer, W. C. Bruson. Sipinning machines, driving mechanism for, J. P. Fishburn. Sheet metal ware, bottoming, W. C. Bruson. Sipining machines, driving mechanism for, J. P. Fishburn. Sheet metal ware, bottoming, W. C. Bruson. Sipining machines, driving mechanism for, J. F. W. Partz. Sugar in blocks or cubes, manufacture of, A. F. W. Partz. Sugar in blocks or cubes, manufacture of, A. F. W. Partz. Sugar in blocks or cubes, manufacture of, A. F. W	133,02 132,95 132,93 132,93 133,04 133,06 132,91 133,06 133,01 132,92 133,00 133,01 132,93 133,00 133,01 132,93 133,00 133,01 132,93 133,02 133,03 13
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