

J. W. H. asks: If the exhaust steam from an engine contains 1/4 of the entire units of heat used in generating it, would it not be practical and economical to pump it back into the boiler? Is this idea new or old? A. The idea is neither novel nor good.

G. F. R. asks: How can I bend brass tubing without injury to the tube? A. Fill the tube with resin or with lead, before bending, and melt the same out after the bending is completed. Lead is the best.

H. Z. E. asks: 1. What is an accurate second of time, and how is it determined? A. 1. You will find table below, upon which to base your calculations. 2. Is it a natural, or artificial unit of measure? A. 2. Artificial. 3. What proportion does the ordinary yard bear to the length of a pendulum beating seconds? A. 3. The length of the seconds pendulum—that is to say, of the pendulum which makes one oscillation per second—varies, of course, with the intensity of gravity; at the level of the sea it is, according to Sabine: 39.02074 inches at the equator (St. Thomas), 39.13983 inches at London, and 39.21469 inches at Spitzbergen.

What is meant by the molecular theory of matter? A. The molecule is the smallest quantity of any elementary substance which is capable of existing in a separate form. H, for instance, represents the atom of hydrogen, while H₂, or H₂, indicates its molecule.

How does the greenback paper dollar compare with specie, as a measure of value? A. Specie is worth about 9 1/2 cents more on the dollar than paper, but its comparative value is constantly varying.

W. S. P. asks: Has the hatching of hen's eggs by artificial heat ever been a success? If so, when, where, and by what process? A. Artificial incubation is considerably practiced. You may see the apparatus in operation at agricultural and industrial exhibitions.

F. B.—For cleaning the ink (containing iron) from your blanks, try a strong solution of caustic potash.

W. B. asks: How much does pure water weigh to the cubic foot? A. Pure water weighs 1,000 ounces per cubic foot.

Will not water drive an engine as well as steam or compressed air, if supplied through a suitable pipe from a reservoir 50 feet above the engine? A. Water will drive an engine, but not so well as steam or compressed air, because of the difficulty of getting the water into and out from the cylinder with sufficient rapidity. Power from water is best utilized by means of a water wheel.

I propose to use a friction arrangement, consisting of a smooth bar, with a dog on each side to clamp the bar, and to have springs to keep the dogs on the bar. Will it work accurately? A. Your friction arrangement would, if the springs were powerful enough, drive the bar; but it would be liable to spring the bar out of true, if one spring were more rigid than the other, as is very likely to be the case.

I have an attachment for lathes by which the speed of tool travel can be changed without stopping the lathe, and can be changed from any one feed to any other in 15 seconds. It is very simple in its construction. There are two shaves running lengthways of the lathe bed, each having a number of wheels, running from large to small, on the back, on which they are keyed fast, while on the front one they are not keyed. They are thrown into action by means of a gear clamp. The clamp is made double (so as to work both ways), the levers of which (when out of motion) rest in the middle one of three notches; and when in the left hand notch, the feed is, say, 20 to the inch, while, when in the right, it will be, say, 18 to the inch. The front shaft imparts motion to the feed screw, and the back receives its motion from the main spindle, and it can be attached to any lathe. Do you think it is of any value? A. It would be highly advantageous to be able to alter quickly the feed of a lathe tool by a simple contrivance, especially in lathes whose screw serves the purpose of tool feeding as well as screw cutting. A moderate range of tool feed is, however, obtained in lathes having an independent tool feed by simply shifting the belt on the cone which drives the tool feed spindle. We are not prepared from your description to speak decisively of your arrangement, but should judge that a wide range of alteration in tool travel could be easily obtained by it.

M. A. G., in answer to several inquiries about keeping water pure in cisterns: Wooden or other cisterns constructed to receive rain water from the roof of buildings, as generally made, soon become foul, with sediment, smoke, and other impurities from the roof. In a short time the water becomes stagnant, and unpleasantly odorous. To remedy this, carry the pipe which brings the water into the cistern to within two or three inches of the bottom, thus discharging the fresh water at the bottom, and causing an entire change of water every time it rains. Then there ought to be an opening or valve of some sort at the bottom, by which you can drain out all the contents, and thoroughly rinse and scrub the inside as occasion may require. An auger hole and plug placed as to be easily accessible would answer the purpose. Such a cistern placed under a woodhouse, or in some secure place out of the reach of frost, with the outlets arranged to be reached from the cellar, and discharging the surplus water into the cellar drain, and a pipe to connect with a pump in the kitchen, will be a wonderful convenience in places where soft water is not easily obtained. I constructed one which has proved very satisfactory after six years' use, in the following manner: About four or five feet outside the cellar, and under a wing of the house, I dug down nearly to the depth of the cellar, and of the required size, say six or eight feet. The ground was a very solid clay, except the surface soil of about 18 inches. This upper portion, in the soft soil, we dug larger, perhaps a foot or more all round. In this portion I laid a stone wall in lime mortar, so that the inside was even with the lower portion of the cistern; I then placed a piece of iron pipe from the bottom of the cistern through the earth, into the inside of the cellar, with the end opening over the cellar drain, wedging the pipe in firmly with small stones and cement, and closing the cellar with a wooden plug. I then plastered the entire inner surface of bottom and side (laying a flat stone in the center to stand upon) with the cement called water lime, mixed with sand; putting on two coats and allowing time to dry; afterwards I put on a coat of clear cement very thin, with a brush, to close any little checks caused in drying. The house was then built over it. The rooms were warm and frost never troubled, and through a man hole in the floor we could go down, and with a broom thoroughly clean the inside, thus at all times having a full supply of water for all household purposes. To illustrate the importance of conveying the incoming water to the bottom, spoken of above, I note the case of a glass aquarium with a fountain in the center, which, though supplied with running water through the fountain, in a few weeks became offensive in odor, and the fish died. We then had a pipe put on conveying a portion of the water into the aquarium at the bottom, which did not interfere with the appearance or efficiency of the fountain, but caused a continuous change of water; and we had no further trouble.

D. says: In answer to several of your correspondents who wish to know how to make rubber hand stamps: Vulcanized rubber used, as prepared by the manufacturers, and can be procured in strips about 8 inches wide and about 1/4 of an inch thick, and of any desired length. The name and address should be set up in common printing type, and the type well oiled; a rim about 1/4 inch in height should be placed around the form, and dentist's plaster, mixed to the proper consistency, poured in and allowed to set; then the plaster cast is separated from the type. A piece of the soft vulcanized rubber is then cut of the size of the plaster mold and laid upon it, and both together are placed in a screw press, and heat sufficient to thoroughly soften the rubber is applied. The screw is then turned down hard and left for a short time until the rubber is perfectly forced into the mold. After the whole is cold, the rubber is separated from the model, and any irregularities trimmed off with a sharp knife; the rubber stereotype is then fastened, with glue or other cement, to a block of wood, and the stamp is ready for use.

H. R. C. sends a description of an improvement upon a leg supporter: On p. 250 of your vol. 80, in answer to "Sufferer," Dr. Chapman, of New Haven, Conn., says: A stiff and straight iron rod, flattened at each end and padded, of the length of the leg, is fastened to the outside of the leg." Now it seems to me this arrangement would be uncomfortable to wear, inasmuch as it does not allow of a free use of the knee joint. I have made a support for a number of parties which works admirably. The support is made entirely of steel except the heel covering, which is made of brass fitted to the heel. The bands placed behind the limb are three in number, covered with calfskin, and lined over a padding of thick beaver cloth with soft sheepskin. These three pieces are stitched together and extended far enough to go around the leg, where they are fastened by metal strips which button on small steel knobs.

MINERALS, ETC.—Specimens have been received from the following correspondents, and examined with the results stated:

H. W. S.—We are unable to decide what the plant is, from the flower. To analyze a plant, we must have stem, leaf, and flower, and sometimes it is necessary to have the roots also. There is no plant, to our knowledge, that is called the Thousand Dollar Plant, either in this country or in Europe. It is doubtful if the plant growing so abundantly in Texas would grow in the colder climate of Germany.—A. J. H.—It is a specimen of iron ore, containing a large percentage of silica.

J. M. K. asks: Can you tell me of the best treatment for asthma by inhalation?—A. M. G. asks: Can you give me a recipe for cleaning an oil painting from particles of paper, etc., that are stuck to it?—L. H. R. asks: What size should I make the steam ports of a cylinder 1 1/2 inches diameter x 1 1/2 inches stroke, to be driven at as high a rate of speed as possible, by an upright cylindrical boiler without any flues (10 inches in diameter x 12 inches high), capable of carrying 80 or 40 lbs. steam?—J. E. W. says: I have a great deal of trouble in obtaining a good light upon my work when engraving on bright surfaces. The reflections are so great at times as to render it difficult to follow the tracings with the graver. I have used shades of various kinds, but find no relief. What will remedy the difficulty?—A. C. F. asks: 1. With what can I size some fancy paper articles for varnishing, the paste of which would be dissolved by the common size? 2. What varnish is best for such articles? It should be nearly transparent, and not readily soluble.—S. M. T. asks: Who made the first cast iron plows used in America, and in what year were they made?—G. W. asks: What kind of varnish would be the cheapest, besides possessing strong adhesive and entirely waterproof qualities, with which to coat paper and not penetrate said paper but very slightly?

COMMUNICATIONS RECEIVED.

The Editor of the SCIENTIFIC AMERICAN acknowledges, with much pleasure, the receipt of original papers and contributions upon the following subjects:

- On the Tides of Lakes. By L. L.
On a Mercurial Telescope. By H. S.
On Car Ventilation. Ry S.
On a Chemical Coquette. By S. H. T.
On Worn Out Clay Soils. By G. V.
On the Influence of the Pole Star. By P. H.
On the Alcohol Question. By Z. C. W.

Also enquiries and answers from the following: C. M. D.—G. W. W.—H. C. A.—S. H.—L. C. J.—R. H. N. J. O. R.—B. G.—A. H. F.—C. I. A.—H. R. C.

HINTS TO CORRESPONDENTS.

Correspondents whose inquiries fail to appear should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them. The address of the writer should always be given.

Enquiries relating to patents, or to the patentability of inventions, assignments, etc., will not be published here. All such questions, when initials only are given, are thrown into the waste basket, as it would fill half of our paper to print them all; but we generally take pleasure in answering briefly by mail, if the writer's address is given.

Hundreds of enquiries analogous to the following are sent: "Please to inform me where I can buy sheet lead, and the price? Where can I purchase a good brick machine? Whose steam engine and boiler would you recommend? Which churn is considered the best? Who makes the best mucilage? Where can I buy the best style of windmills?" All such personal enquiries are printed, as will be observed, in the column of "Business and Personal," which is specially set apart for that purpose, subject to the charge mentioned at the head of that column. Almost any desired information can in this way be expeditiously obtained.

[OFFICIAL.]
Index of Inventions
FOR WHICH
Letters Patent of the United States
WERE GRANTED IN THE WEEK ENDING
August 4, 1874,
AND EACH BEARING THAT DATE.
(Those marked (r) are reissued patents.)

Table listing inventions with names and dates, including: Adding machine, C. J. Holman; Alarm, burglar, A. Neving; Amalgamating apparatus, A. L. Nolf; Animal feta, rendering, J. J. Willis; Ash barrel, sheet metal, T. M. Bell; Ash can receptacle, Greenbaum et al.; Auger, earth, G. G. Collins; Axles, turning, R. Zelder (r); Baby walker, M. S. Holman; Bag frame, carpet, M. Schmickl; Baggage seal, J. C. Wands; Bale tie, cotton, J. G. Battelle; Bale tie, cotton, Crono & Cromer; Bale tie, cotton, A. A. Goldsmith; Barrels, cleaning, Stearns et al.; Batteries, cell for galvanic, A. L. Nolf; Beds, ventilating, E. L. Roberts; Bedstead, S. P. Leake; Bee hive, T. F. Wingo; Billie, H. B. Fox; Boiler, sectional steam, J. C. Kilgore; Bolt-heading machine, J. & J. Kennedy; Bone black, manufacture of, S. Billitz; Boots, pulling lasts from, L. Nelson; Boots and shoes, A. Colburn; Bottle stopper, E. Clark; Bottle stopper, W. E. Hawkins; Bracelet, C. Heilig; Bridges, lowering, L. Soulerin; Broiler for gas heaters, H. W. Brinkerhoff; Butter cutter, J. S. Taylor; Butter gages and cutters, S. Richards; Camera attachment, D. A. Woodward; Can for oil, etc., C. Brangrove; Can for oil, etc., G. H. Chinnock; Can for oil, etc., J. G. Evenden; Can for oil, etc., H. Heeley; Can for oil, etc., safety, Chase & Cram; Canal boats, propelling, C. Howard; Candy, manufacture of rock, J. Nossian; Car axle box, W. W. & C. T. Crane; Car axle lubricator, Bollman & Ernst; Car axle, railway, S. M. Cate; Car brake, W. H. H. Snellbaker; Car coupling, W. Clendinning; Car coupling, B. B. Harris; Car coupling, T. J. Hubbell; Car coupling, T. T. Shotwell; Car roof, J. C. Wands; Car wheel, G. W. Mooers; Car window, L. D. Wheeler; Carbureting apparatus, E. P. Wheeler; Carbureting apparatus, Wilson et al.; Carpet lining, E. H. Bailey; Carriage curtain eyelet, W. H. Stickle; Carriage, hose, J. T. Ryan; Caster, furniture, J. Johnson; Castings, grate for, C. Truesdale; Cement for leather, waterproofing, A. Mc Nicol; Chair, baby, M. B. Lott; Chair hat support, E. P. Curtiss; Churn, N. Ewing; Cloth napping machine, A. Brown; Clothes pounder, W. H. Williams; Coal screen and elater, J. Beadle; Compost distributor, Cox & Garris; Cooking apparatus, steam, I. H. Spelman; Copper ore, treating, F. Zwickl; Copper, refining, J. R. Cooper; Corn sheller, E. L. Hutchinson (r); Corset, C. S. Chaffee; Cotton chopper and cultivator, K. McKinnon; Cultivator, sulky, W. M. Coston; Cutter, feed, J. P. Davison; Cutter head, B. & H. W. Pearson; Derrick for raising fences, M. Gray; Dredging bucket, J. B. Wood; Drill, ratchet, E. F. Bonaventure; Drill, dock, G. Frisbee; Elevator, W. C. Seiden; Elevator, hydraulic, A. Granville; Engine, electro-magnetic, L. Bastet; Engine, injection steam, F. W. Coy; Engine, pulp, W. Kennedy; Engines, governor for steam, P. N. Stover; Fan, automatic, Coyne & Gillilan; Fare box, J. B. Slawson; Feed water heater, etc., E. G. Frykberg; Fertilizer, distributor, D. S. Curtiss; Fire arm, breech-loading, J. W. Cochran; Fire arms, lock for, S. Rush; Fire extinguisher, D. J. Tapley; Fire kindler, R. G. Williams; Fire kindling, J. Commine; Flour pot, J. E. Landers; Forr, horse hay, G. H. Smith; Fountain, portable, W. A. Pungs; Furnace, smoke-burning, S. A. Ford (r); Furniture, joint for, C. T. Cleveland; Furniture spring, W. T. Doremus; Garden scarifier, H. Vosburg; Gas heater broiler, H. W. Brinkerhoff; Gas main seal dip, B. F. Reinmund; Gases, purifying, B. Stillman; Glass furnace, J. H. Cowl; Governor, automatic fire, J. Slade; Grates, shaking, H. Adams; Halter, R. Schmidt; Harness fold, E. F. Beck; Harrow, wheel, J. F. Sayer; Harvester and thrasher, Collins & Maynard; Harvesting, corn, J. I. McClintic; Hatchway, self-closing, Staples & Holmes; Hay loader, A. Walter; Heating drum, J. R. Webber; Heel lift holder, G. V. Scott; Hog cleaning machine, N. Silvertorn; Horse clipping machine, Reynolds & Earl; Horse collar, C. B. Rich; Horseshoe nails, burnishing, D. Dodge; Inkstand, B. W. Conroy; Iron resembling speigeleisen, E. Baker; Ladder, extension, M. N. Lovell; Lamp, D. H. Chamberlain; Lock, permutation, J. Cassino.

Table listing inventions with names and dates, including: Lock, seal, T. J. Craft; Locks, seal, Foote and Randall; Locomotive whistles, operating, H. Wise; Loom, M. Harriman; Loom for weaving wire cloth, C. F. Wickwire; Loom let-off mechanism, J. Smith; Lounge, convertible, W. B. Coates; Mallet for smoothing metal, Clark et al.; Matting, metallic, L. Wilkinson; Medical compound, I. Saalfeldt; Meta's, cutting and shaping, C. Van Haagen (r); Mill feed device, grinding, G. S. Cranson; Mirror holder, W. Simpson; Molding patterns, machine for, A. Eames; Mop wringer, H. L. Ennes; Mower lawn, Crawford and Lindsay; Muff, head, A. Schulte; Neck tie retainer, F. C. Dayton; Nozzle or hose sprinkler, J. H. Fowler; Oil, manufacture of oxidized, F. Walton; Organ coupler, reed, G. B. Kelly; Packing for pistons, E. W. Lippincott; Paper stock, pulping, H. J. Lahousse; Parer, apple, S. E. T. Dodson; Pavement, A. Blank; Peach stoner, H. Z. Young; Photo enamels, vitrified, W. F. Watson; Pianoforte attachment, M. W. Hanchett; Pipes, etc., Hingiron, G. Willard; Pitman, W. J. Crane; Plating tin pipes, etc., W. A. Shaw; Polishing rods, J. Illingworth; Potato coverer, L. Waitford; Press, steam cotton, E. L. Morse; Pulley shield, Allen and Miller; Pump, double acting, Saxton and Hill; Pump valve, B. F. Biggs; Radiator, J. Mason; Railway carriages, moving, C. Anderson; Railway, elevated, T. C. Clarke; Railway, elevated, J. M. Hannah; Railway signal, electro pneumatic, A. Bernateln; Railway vacuum brake, F. W. Eames; Ribbon block, W. Obriet (r); Rolled metallic bars, R. P. Colton; Rolls, handling metal at the, O. C. Dewey; Roof, metallic, G. F. Ullmann; Roofing paper, R. Colby; Rudders, brace for, J. P. Foote; Sash holder, T. Hooley; Saw handle, C. R. Sligh; Saw mill, H. D. E. N., and E. T. W. Czes; Screw taps, cutting, H. E. Boyd; Screw-threading tubes, J. Heap; Separator, grain, E. Davis; Separator, grain, A. Low; Sewing and cutting stand, C. A. Werden; Sewing machine, I. Manning; Sewing machine castor, Sloan and Fisk; Sewing machine quilter, J. Happe; Shirt bosom and suspenders, I. Prinz; Shoes, J. H. Hasey; Sieve, G. Wright; Sleigh, A. Streat; Sole-channelling machine, J. H. Husey; Sower, seed and fertilizer, T. C. Sebring; Sponge for upholstery, P. S. Devlan; Steam trap, J. W. Hodges; Stone, etc., carving, C. O. Luce; Stove, base-burning, J. Spear; Stove, cooking, D. E. Paris (r); Stove, cooking, T. R. Timby; Stove, heating, H. H. Bennet; Stove, heating, A. Brown (r); Stoves, extension shelf for, A. C. Barstow; Stump extractor, J. S. Mulholen; Suspenders, H. Hubbard; Swing, A. Shoeninger; Tank for oil, etc., F. C. Wilson; Thill coupling, R. Austin; Thill coupling, Crowell and Horn; Threshing machine, W. Christie; Toy, W. R. Withers; Toy gun, A. Steinbock; Toy puzzle, A. W. Magerhaus; Toy sawing, Miller and Toeckle; Trap, animal and insect, I. N. Pangle; Treadles, operating, N. Stone; Trolling spoon bait, G. M. Skinner; Tubes, mouth piece for speaking, T. C. Smith; Type case, B. O. Woods (r); Umbrella, A. and W. Hill; Valve motion, G. Rickert; Vehicle, M. V. Nichols (r); Vehicle spring, C. H. Guard; Vehicle wheel, H. Nycum; Vehicle wheel, A. N. Price; Vehicles, umbrella holder for, G. F. Dewey; Velocipede, J. Audeers; Ventilating m'nes, G. W. Williamson; Wagon jack, J. J. Upham; Walls, securing plaster to, P. H. Power; Washing machine, S. Croft; Washing machine, S. C. Hamlin; Washing machine, C. A. Werden; Water wheel, J. Holtvoigt; Weather strip, J. S. Wertz; Well casing spear, artesian, J. S. Muenger; Whip stock rubber covering, G. H. Douglas.

APPLICATIONS FOR EXTENSIONS.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter mentioned: 30,633.—FIRE ESCAPE.—E. B. Larchar. Oct. 28. 30,745.—CULTIVATOR.—N. Messenger. Nov. 11.

EXTENSIONS GRANTED.

29,490.—MILL.—C. B. Hutchinson. 29,500.—BLANK ROLLING MACHINE.—N. C. Lewis. 29,502.—PIANOFORTE.—H. Lindeman. 29,510.—CAR FLOOR, ETC.—R. Montgomery. 29,523.—CAMERA.—A. Semminger. 29,534.—LATHES.—B. D. Whitney. 29,551, 29,562.—BOOTS AND SHOES.—L. R. Blake. 29,576.—ENGINE PISTON.—H. D. Dunbar. 29,579.—ENGINE GOVERNOR.—R. W. Gardner. 29,593, 29,594.—REAPER AND MOWER.—A. A. Henderson. 29,648.—SEWING MACHINE NEEDLE.—F. H. Drake.

DISCLAIMER.

29,579.—ENGINE GOVERNOR.—R. W. Gardner.

DESIGNS PATENTED.

7,602.—HEATER.—J. B. Bener, Philadelphia, Pa. 7,603.—CALENDAR.—W. A. Emerson, Providence, R. I. 7,604.—VASE.—J. W. Fiske, New York city. 7,605.—PEDIESTAL.—J. W. Fiske, New York city. 7,606.—BOTTLE.—A. Gruning, New York city. 7,607.—COOKSTOVE.—C. Noble, Philadelphia, Pa.

7,608.—CARPET.—C. A. Richter, Philadelphia, Pa.
7,609 to 7,616.—OIL CLOTHS.—J. Hutchison, Newark, N. J.
7,617 to 7,621.—CARPETS.—C. T. Meyer et al.
7,622 to 7,624.—BARRERS.—C. Osborne, N. Attleborough, Mass.
7,625.—OIL CLOTH.—J. B. Virelet, Paris, France.
7,626.—FURNITURE LEGS.—F. Robertson, New York city.

TRADE MARKS REGISTERED.

1,911.—YEAST POWDER.—A. G. Dooley, New York city.
1,912.—RUM.—L. H. Felton, Boston, Mass.
1,913.—BUTTONS.—Newell Bros. Co., Springfield, Mass.
1,914.—INKSTANDS.—A. Teyssonier, Paris, France.
1,915.—MEAT EXTRACT.—San Antonio M. E. Factory, Tex.
1,916.—SILK GOODS.—E. Warburg & Co., New York city.
1,917.—CHEWING TOBACCO.—Beck et al., Chicago, Ill.
1,918.—GLUE, ETC.—Champton Glue Co., Chicago, Ill.
1,919 & 1,920.—SOAP, ETC.—Colgate & Co., N. Y. city.
1,921 & 1,922.—FELT SKIRTS.—Elliot Mills, Boston, Mass.
1,923.—MEDICINE.—Leath & Ross, London, England.
1,924.—CIGARS, ETC.—Consolidated Tobacco Co., Gilroy, Cal.

SCHEDULE OF PATENT FEES.

Table with 2 columns: Description of patent action and Fee amount. Includes 'On each Caveat', 'On each Trade Mark', 'On filing each application for a Patent (17 years)', etc.

CANADIAN PATENTS.

LIST OF PATENTS GRANTED IN CANADA
AUGUST 3, 1874.

- 3,720.—T. Y. Cassiano, San Antonio, Bexar county, Tex., U. S. Improvements on hats, called "Cassiano's Improved Hat." Aug. 3, 1874.
3,721.—P. F. King, G. N. Beard, and E. J. Beard, St. Louis, Mo., U. S. Improvements on nut locks, called "King Excelsior Nut Lock." Aug. 3, 1874.
3,722.—G. P. Draper, Rochester, N. Y., U. S. Improvement on sewing machine tables, called "Draper's Sewing Machine Table." Aug. 3, 1874.
3,723.—L. Draper, North Attleborough, Mass., U. S. Improvement on curryscombs, called "Draper's Self-Cleaning Curryscomb." Aug. 3, 1874.
3,724.—C. Callahan and E. E. Sibley, Chelsea, Mass., U. S. Improvements on knitting machines, called "Callahan's Knitting Machines." Aug. 3, 1874.
725.—R. C. Cull, Hamilton, Ont. Machine for mincing meat, called "Cull's Meat Mincing Machine." Aug. 3, 1874.
726.—A. H. Wagner, Windsor, Ont. Improvements on pitchers or vessels for containing thick or cohesive liquids, called "Wagner's Double Lipped Pitcher." Aug. 3, 1874.
3,727.—A. Harvey, Toronto, Ont. Improvements on the mode of applying for insurances and of writing or printing and issuing policies therefor, called "Harvey's Insurance System." Aug. 3, 1874.
3,728.—J. W. Cuthbertson, Brantford, Ont. Improvements on frames for window screens, called "Cuthbertson's Improved Window Screen." Aug. 3, 1874.
3,729.—W. J. Burleigh, Rome, N. Y., U. S. Improvements on the manufacture of starch polish, called "Burleigh's Starch Polish." Aug. 3, 1874.
3,730.—T. Young, Montreal, P. Q. Improvements on a cooking stove, called "The Mechanic." Aug. 3, 1874.
3,731.—J. E. Clisco, Conneautville, Pa., U. S. Improvements on car couplings, called "Clisco's Car Coupling." Aug. 3, 1874.
3,732.—A. A. Griffing, Jersey City, N. J., U. S. Improvements on steam radiator, called "Griffing's Radiator." Aug. 3, 1874.
3,733.—W. Thilmay, Cleveland, O., U. S. Improvements on the art or process of treating textile fabrics to prevent mildew and decay, called "Thilmay's Process of Treating Textile Fabrics to Prevent Mildew and Decay." Aug. 3, 1874.
3,734.—S. C. Hendrickson, Brooklyn, N. Y., U. S. Improvements on electric railway signaling apparatus, called "Hendrickson's Electric Railway Signal." Aug. 3, 1874.

Advertisements.

Back Page \$1.00 a line.
Inside Page 75 cents a line.
Engravings may head advertisements at the same rate per line, by measurement, as the letter press. Advertisements must be received at publication office as early as Friday morning to appear in next issue.

Geo. W. Read & Co.,

Manufacturers of and Dealers in
ALL KINDS OF HARD WOODS, IN LOGS,
PLANK, BOARDS, & VENEERS,
186 to 200 Lewis St., Foot 5th & 6th Sts.,
East River, New York.
Attention is especially invited to our Stock of French Walnut and Ash Burls, Birds-Eye and Curly Maple, Satin Wood, Tulip, Rosewood, and Hungarian Ash. Also, Seasoned Mahogany, Walnut, Spanish and Red Cedar, and White Holly.
Orders by mail have prompt and careful attention. Send for Catalogue and Price List.
PATENTS F. T. H. RAMSDEN, Bryan Block, Sold and Chicago, Ill. Mechanical Engineer and Introduced. Manufacturers' Agent.

DAVIS & DUBOIS
COMBINATION TALLOW CUP
BEST IN THE MARKET
S.W. COR. LEOPARD & OTTER ST. PHILA.

\$475 A MONTH TO AGENTS. Address C. M. LINTON & BRO., New York or Chicago
MACHINERY, NEW and 2d-HAND—Send for Circular. CHAS. PLACER & CO., 80 Vesey St., New York.

THE TRADE ENGINE.
Noiseless in operation—Perfect in workmanship—all light parts of Cast Steel.
Every Engine indicated, and valve corrected to give the highest attainable results.
Warranted superior to any semi-portable Engine in the market.
Send for Price List and Circular.
HERRMAN & HERCHEL-RODE M'FG CO., Dayton, Ohio.

FOR STEEP AND FLAT ROOFS. EST'D 1856.
READY ROOFING. SAMPLES & CIRCULARS SENT FREE.
READY ROOFING CO. OF N.Y., 64 CORTLANDT ST.

ADVERTISERS! Send twenty-five cents to GEO. F. ROWELL & CO., 41 Park Row, New York, for their Pamphlet of one hundred pages, containing lists of 3,000 newspapers, and estimates showing cost of advertising.

MAGNETS—Permanent Steel Magnets of any form or size, made to order by F. C. BEACH & CO., 288 Broadway, New York. Makers of the celebrated Tom Thumb and Miniature Telegraph Instruments.

SAMPLES OF MACHINES, TOOLS, and IMPLEMENTS, received, exhibited, and orders taken. A. M. PAXTON & CO., Vicksburg, Miss.

\$2400 Yearly to Agents. 64 new articles and the best Family Paper in America, with two 5¢ Christmas Family Journal, 800 Broadway, N. Y.

The Toll-Gate! Prize Picture sent free! An ingenious gem! 50 objects to find! Address, with stamp, E. C. ARBEY, Buffalo, N. Y.

PATENT Planing and Matching and Molding Machines, Gray & Wood's Planers, Self-feeding Saw Arbors, and other wood working machinery. S. A. WOODS MACHINE CO., 91 Liberty St., N. Y. Send for Circulars, etc. 67 Sudbury St., Boston.

THIS MONTH A WELL KNOWN FIRM of Engineers and Machinery Agents, with large connections at home and abroad, will open a ground-floor Warehouse, having windows fronting Queen Victoria Street and Cannon Street, City, London, England. The firm is prepared to accept the agency for special machinery, tools, etc., and to exhibit a choice selection of these and of working models. Advertisers' travelers canvass Great Britain and the whole of Europe. For terms, apply to W. P., Box 778, New York City.

FOR LEGAL ADVICE CONCERNING Infringements and Patents, consult R. B. McMASTER, Counsellor at Law, 9 & 11 Nassau St., Room 26, New York. Counsellor and Advocate in Patent Cases.

THE CHAMPION SILVERSTEEL SPRING MATTRESS, now greatly improved, has been before the public for several years, and continues to occupy its unrivalled position in the trade, as the BEST BED ever produced. It presents the rich and elegant appearance of silver, and is the softest, easiest, cheapest, and most durable Spring Bed in market. Wholly composed of tenacious tempered steel springs, so united that the pressure is equal to distribute the body lifted, curled, or rolled up. Both sides alike. No frame, no wooden slats, no low stuffing, no straps. May be used on floor without bedstead. No under bed required. Needs only half the thickness of hair mattress. More springs for your money in this bed than in any other. Unequaled for hotels. Any sizes made to order. Send for pictorial circular. Retail price of double bed, \$18. Shipped by single bed or quantity, to all parts of the world. Liberal discount to the trade. Sold by leading dealers in all parts of the country. Refer to Phelps, Doremus & Corbett, J. T. Allen & Co., New York, Gould & Co., Philadelphia, Pa., Gilbert & Sons, Norwich, Conn., Bowditch & Co., New Haven, Conn., and many others. CHAMBERLAIN'S SPRING MATTRESS CO., Makers, 246 Canal St., near Broadway, New York.

CIVIL AND MECHANICAL ENGINEERING AT THE RESSLAER POLYTECHNIC INSTITUTE, Troy, N. Y. Instruction in mechanical, advanced, and practical, in this country. Graduates obtain excellent positions. Re-opens Sept. 15th. For the Annual Register, containing improved Course of Study, and full particulars address Prof. CHARLES DROWNE, Directors.

The Chilean Exposition Packages for this Exposition can be shipped at the Pacific Mail S. S. Co's Office, foot of Canal St., New York, and from the Pacific ports touched at by the Steamers of this Company. One dollar, gold, for each package weighing not more than 2000 pounds, or measuring not more than 20 cubic feet, is the only cost of ocean transportation to Chili. Heavier or larger packages may be shipped per same line at low rates under special contract. Application for rates to the Exposition must reach Chile by January 1, 1875. Particulars may be obtained by addressing any one of the United States Commissioners for the Exposition, any Chilean Consul in the United States, or A. VILLARROEL, Corresponding Agent, 52 Pine St., New York.

FORGING & FINISHING MACHINERY, Fixtures and Tools complete for making guns, sewing machines, etc., to model, furnished to order by THE PRATT & WHITNEY CO., Hartford, Conn.

BLAKE'S PATENT Stone and Ore Breaker
Crushes all hard and brittle substances to any required size. Also, any kind of STONE for ROADS and for CONCRETE, &c. Address BLAKE CRUSHER CO., New Haven, Conn.

A FORTUNE FOR ALL in the Rubber Stamp Business. Address DORMAN'S STENOGRAPHER AND STAMP WORKS, Baltimore, Md.

The American Turbine Water Recently improved and submitted to thorough scientific tests by James Emerson, showing the following useful effect of the power of the water utilized, being the highest results ever known.
Percentage of Part Gate: 4, 50.06; 6, 69.84; 7, 78.78; 8, 82.53; 9, 82.90.
Per cent. of Whole Gate: 83.14.
A full report may be obtained of STOUT, MILLS & TEMPLE, Dayton, Ohio.

PERFECTION OF SPEED ON WATER WHEELS secured by the Rotary Hydraulic Governor, under all possible conditions. Never fails. Under extreme changes, it operates the entire gate in ten seconds. Warranted unlimited. No pay till tested. JOHN S. ROGERS, Tremont, 19 John Street, Boston, Mass.

"HOW TO DO IT."
Would you make money near home, selling "Good Books for All"? Send stamp for instructions to S. R. WELLS, 389 Broadway, New York.
TO MANUFACTURERS & AGENTS.
Designs of patentable inventions constantly supplied to a well established and reliable firm on payment of \$1,000 per month. Salary not payable till end of month, when designs can be returned and salary withheld, if not satisfactory. Address G. N., Box 73, Station D, New York City.

SHINGLE AND BARREL MACHINERY.—Improved Law's Patent Shingle and Heading Machine, simplest and best in use. Also, Shingle Heading and Slave Jointers, Stave Equalizers, Heading Planers, Turners, &c. Address TREVOR & CO., Lockport, N. Y.

PORTABLE STEAM ENGINES, COMBINING the maximum of efficiency, durability and economy, with the minimum of weight and price. They are widely and favorably known, more than 1,000 being in use. All warranted satisfactory or no sale. Descriptive circulars sent on application. Address THE J. C. ROADLEY CO., Lawrence, Mass.

IRON BRIDGES—CLARKE, REEVES & CO., PHOENIXVILLE BRIDGE WORKS. Office, 410 Walnut Street, Philadelphia, Pa.
Specialties—Accurate Workmanship—Phoenix columns—Use of double refined iron. No welds. All work done on the premises, from ore to finished bridges. Illustrated Album mailed on receipt of 75 cents.

Machinery, Wood and Iron Working of every kind. Leather and Rubber Belting, Emery Wheels, Rabbit Metal, &c.
Sturtevant Blowers. Of every size and description, constantly on hand.

Cold Rolled Shafting. Best and most perfect Shafting ever made, constantly on hand in large quantities, furnished in any lengths up to 24 ft. Also, Pat. Coupling and Self-rolling adjustable Hangers, pulleys, etc. GEORGE PLACE & CO., 12 Chambers Street, & 103 Beade Street, New York.

Niagara Steam Pump. CHAS. S. HARDICK, 28 Adams St., Brooklyn, N. Y.

THE JOHN HARDICK Niagara Steam Pump. HUBBARD & ALLER, Brooklyn, N. Y.

PUNCHING AND DROP PRESSES. For the Box and Case—Best Address THE STILES & PARKER PRESS CO., MIDDLETOWN, CONN.

WOOD-WORKING MACHINERY Generally. Specialties, Woodworth Planers and Richardson's Patent Improved Tenon Machines. Central corner Union St., Worcester, Mass. WITHERBY, RUGG & RICHARDSON.

\$5 & \$20 per day at home. Terms Free. Address GEO. STRINSON & CO., Portland, Maine.

WROUGHT IRON BEAMS & GIRDERS

THE Union Iron Mills, Pittsburgh, Pa. The attention of Engineers and Architects is called to our improved Wrought-Iron Beams and Girders (patented), in which the compound welds between the stem and flanges, which have proved so objectionable in the old mode of manufacturing, are entirely avoided, we are prepared to furnish all sizes at terms as favorable as can be obtained elsewhere. For descriptive circulars address Carnegie, Kloman & Co., Union Iron Mills, Pittsburgh, Pa.



Small Tools of all kinds: also GEAR WHEELS, parts of MACHINES, and materials of all kinds. Castings of Small Lathes, Engines, Slide Rasts, &c. Catalogues free. GOODNOW & WIGHTMAN, 23 Cornhill, Boston, Mass.

BANKRUPT'S SALE OF HORIZONTAL and Vertical Steam Engines. Also, new and second hand Machinists' Tools. Send for circulars at THE YALE IRON WORKS, New Haven, Conn.

\$10 A DAY. Employment for all. Patent Novelties. GEO. L. FELTON, 119 Nassau St., N. Y.

SHINGLE & BARREL MACHINERY EVART'S IMP. HEADING AND SHINGLE SAW, STAVE CUTTERS, JOINTERS, EQUALIZERS, AND HEADY-TURNERS. BAILEY GAUGE LATHES—For turning all kinds handies and Cabinet work. Simplest and best in use. We manufacture a full line of Wood and Iron Working Machinery, Steam Engines, &c. Address T. R. BAILEY & VAIL, Lockport, N. Y.

RISDON'S IMPROVED TURBINE. Has the tightest gates and most durable. Has yielded the highest percentage of any wheel tested at Holyoke or else where. 1873, Dec. 10—36 in. wheel full gate 91 per cent., seven eighths—89, three quarters—82, 1874, Apr. 23—43 in. wheel full gate 91 per cent., seven eighths—89, three quarters—83, five eighths—76. Additional information sent upon application to T. H. RISDON, TYLER & CO., Mount Holly, N. J.

E. M. MAYO'S PAT. BOLT CUTTER. Send for Illustrated Circular, Cincinnati, Ohio.

1832. SCHENCK'S PATENT. 1871 WOODWORTH PLANERS And Re-sawing Machines, Wood and Iron Working Machinery, Engines, Boilers, etc. JOHN B. SCHENCK'S SONS, Mattawan, N. Y. and 118 Liberty St., New York.

OUR COVERING FOR BOILERS AND PIPES saves Twenty Percent in Fuel. OUR FELT, CEMENT AND PAINT FOR ROOFS is the best in the market.

Asbestos Felting Co. 316-322 Front St., N. Y.

SAFETY HOISTING OTIS' Machinery. OTIS BROS. & CO., NO. 348 BROADWAY NEW YORK. R. BALL & CO., 100 NASSAU ST., N. Y.

WOOD WORKING MACHINERY For Planing Mills, Car Shops, Sash, Blind and Door Makers, &c., &c. Send for Illustrated Catalogue and price list. Factory, 27 Worcester, Mass. Salesroom, at 121 Chambers & 109 Beade Sts., New York.

P. BLAISDELL & CO.,

Worcester, Mass. Manufacturers of the Blaisdell Patent Upright Drills and other first-class Machinists' Tools.
NEW & IMPROVED PATTERNS.—MACHINE TOOLS.—All sizes—at low prices. E. GOULD, 77 to 118 N. J. R. Ave., Newark, N. J.

Andrew's Patents. Noiseless Friction Grooved, or Geared Helix ors, suited to every want. Safety Stair Elevators. Prevent Accident, Hoop, Belt, and Engine break. Smoke-Burning Safety Boilers. Oscillating Engines, Double and Single, 1-2 100-Horse power. Centrifugal Pumps, 100 to 100,000 Gallons per Minute. Best Pumps in the World, sand Mud, Sand, Gravel, Coal, (Grain, etc.) without injury. All Light, Simple, Durable, and Economical. Send for Circulars. WM. D. ANDREWS & BRO., 414 Water Street, New York.

GLASS MOULDS for Fruit Jars, Lamps, Bottles, Ink Stands, etc., made by H. BROOKER 15 years' COR. WHITE AND CENTER STS., N. Y. For any thing new in glass you will require a mould (to die). PARTICULAR ATTENTION paid to MOULDS for INVENTORS. Send model or drawing; inclose stamp.

RICHARDSON, MERIAM & CO. Manufacturers of the latest improved Patent Dangle and Woodworth Planing Machines, Shaping, Sash and molder, feeding, Moulding, Boring, Milling, Vertical and Circular Re-sawing Machines, Saw Mills, Saw Arbors, Scroll Saws, Railway, Cut-off, and Rip-saw Machines, Spoke and Wood Turning Lathes, and various other kinds of Wood-working Machinery. Catalogues and price lists sent on application. Manufacturing Worcester, Mass. Warehouse 107 Liberty St., New York 17.

HAND SAW MILL—Saves the labor of 3 men. S. C. HILLS, 51 Courtlandt St., New York.

WHETHER YOU WISH TO BUY OR SELL STEAM ENGINES, MACHINERY or PATENTS. Write to E. E. ROBERTS, 119 Liberty St., N. Y.

AGENTS Send Stamp for Best Novelties. NOVELTY AGENCY CO., Wilmington, Del.

Established 1858. PRINCE'S METALLIC PAINT. 72 lbs Metal in the 100 lbs. 300 lbs. TRADE MARK PATENTED.

The best and cheapest Paint in the world for Iron, Tin or Wood. For sale by the Trade everywhere. PRINCE'S METALLIC PAINT CO., Manufacturers, 96 Cedar St., New York. CAUTION.—Purchasers and consumers are cautioned against imitations of our METALLIC PAINT. All genuine PRINCE'S METALLIC PAINT will bear our name and trade mark on each and every package. Send for a circular.

To Electro-Platers.

BATTERIES, CHEMICALS, AND MATERIALS, in sets or single, with books of instruction, manufactured and sold by THOMAS HALL, Manufacturer, Electrician, 19 Broadfield Street, Boston, Mass. Illustrated catalogue sent free on application.

ANOTHER CHANCE!

Fifth and Last Gift Concert IN AID OF THE Public Library of Kentucky,

POSTPONED TO November 30, 1874.

DRAWING CERTAIN AT THAT DATE.

LIST OF GIFTS. One Grand Cash Gift, \$250,000. One Grand Cash Gift, 100,000. One Grand Cash Gift, 75,000. One Grand Cash Gift, 50,000. One Grand Cash Gift, 25,000. 5 Cash Gifts, \$20,000 each, 100,000. 15 Cash Gifts, 14,000 each, 140,000. 10 Cash Gifts, 10,000 each, 100,000. 20 Cash Gifts, 5,000 each, 100,000. 25 Cash Gifts, 4,000 each, 100,000. 30 Cash Gifts, 3,000 each, 90,000. 50 Cash Gifts, 2,000 each, 100,000. 100 Cash Gifts, 1,000 each, 100,000. 240 Cash Gifts, 500 each, 120,000. 500 Cash Gifts, 100 each, 50,000. 19,000 Cash Gifts, 50 each, 950,000. Grand Total, 20,000 Gifts, all cash, 2,500,000.

PRICE OF TICKETS. Whole Tickets, \$50 00. Halves, 25 00. Tenths, or each Coupon, 5 00. 11 Whole Tickets for, 500 00. 22 1-2 Tickets for, 1,000 00. For Tickets or information, Address

THO. E. BRAMLETTE, Agent and Manager. Public Library Building, Louisville, Ky. or THOMAS H. HAYS & CO., EASTERN AGENTS, 609 Broadway, N. Y.

WORCESTER FREE INSTITUTE. A School of Applied Science. For catalogue, address Prof. C. O. THOMPSON, Worcester, Mass.

\$70 A WEEK TO AGENTS—Sure. Four new Patents. J. D. NESBITT, Foxboro', Mass.

WANTED—In every Southern State, N. Y., Pa., and Cal., a purchaser for the entire right to manufacture and sell HAWKES' SELF-HEATING SOLID-BURNING IRON, CAN OPENER AND LAMP, one of the most popular recent inventions of the day. If not sold, will be let on Royalty. WENDELL & F. ANCIS, 53 N. 10th St., Philadelphia, Pa.

PRINTING MACHINERY—Agent wanted for the United States, for the sale of first class English Lithographic Machines, the well known Wharfedale Letterpress Machines, galletries, Cu. ting, Rolling, Glazing, and Reeling Machines, Screw and Hydraulic Presses, Engines and Boilers, all of first class manufacture, and commanding the chief patronage in England and the Continent of Europe, at much lower prices than are obtained for Machines of American Manufacture. Liberal Discount would be given to a first class respectable Agent. Apply to the PARAGON MACHINE COMPANY, LIMITED, Eiland Road, Leeds, England. Terms Cash or Liberty.