

far decided to write this article for the SCIENTIFIC. The differences of opinion are vast, some pretending to say, that to work steam expansively requires ten or fifteen per cent. more coal than to follow full stroke. I have tried it, and have found it to be an advantage, and shall continue to promulgate the doctrine until I am convinced to the contrary.

Yours,
Reading, Pa., June, 1867. R. S. D.

Recent American and Foreign Patents.

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

WASHING MACHINE.—Alexander Brooks, Waverly, N. Y.—This invention has for its object to furnish an improved washing machine so constructed and arranged as to wash the clothes rapidly, thoroughly and conveniently and without injury to the fabric.

ADJUSTABLE PARALLEL VISE.—O. V. Flora, Madison, Ind.—This invention has for its object to furnish an improved vise which can be readily and quickly adjusted to the size of the object to be held, and which will adjust itself to the shape of the object to be held whether its sides be parallel or inclined.

CLOTHES DRYER.—Reubin Hamblin, Mishawaka, Ind.—This invention has for its object to furnish an improved apparatus for drying clothes by means of which a large drying surface may be supplied while occupying a small amount of space.

LIFE PRESERVER.—John Golding, New York City.—This invention relates to a device by which mattresses can be connected to form floats for the purpose of saving the lives of shipwrecked passengers. The invention consists in the application and attachment to the ends and sides of mattresses of snap hooks and eyes or loops whereby a number of mattresses can be instantaneously connected into one floating structure, upon which a number of persons can find temporary supports with a sufficient quantity of provisions and other necessities.

BELTING.—C. J. Fay, Philadelphia, Pa.—This invention relates to the use of paper made of manilla, hemp or grass, for the purpose of belting of any description for machinery, etc., and also for harnesses and other similar purposes.

MACHINE FOR FORMING SPOKES.—C. C. Dupue, Wayne, Mich.—This invention has for its object to furnish a cheap and durable machine that can be run with one horse power or by hand, and which will finish a spoke at one operation.

HINGE.—Wm. Webb, Waterbury, Conn.—This hinge is especially designed for coal oil lamps, and is so constructed as to produce a stop or rest for the chimney holder as it is swung away from the wick tube.

LAMPS.—E. D. Norton, Bradford, Pa.—This invention consists in combining with lamp, a safety valve of a novel construction through which the gases formed in the lamp, can escape as fast as generated, and thus all possibility of an explosion be obviated.

MACHINE FOR MEASURING AND LAPPING TAPE AND BRAID.—Wm. Rhodes Arnold, Providence, R. I.—The object of this invention is to measure tape, braid, binding or other similar goods into exact lengths for the trade, say in pieces five yards long, and at the same time form them into sticks by lapping or foing.

CARRIAGES.—Caleb Condemann, Hornellsville, N. Y.—This invention consists in securing or suspending the body of the buggy, to the axles by and through the means of springs applied in a novel manner whereby many advantages are secured.

COMBINATION OF SPRINGS AND HINGE FOR DOORS AND WINDOW BLINDS, ETC.—Alvah Wiswell, New York.—This invention consists in a novel and improved combination of a spring and hinge, as hereinbefore fully shown and described, whereby the spring is rendered subservient in keeping the door or blind in both an open and a closed state so as to render unnecessary the use of fastenings for that purpose, and also rendered capable of closing the door or blind after being partially opened and of being graduated so as to operate with a greater or less degree of strength as may be required.

APPARATUS FOR SUPPLYING AIR TO LIFE BOATS.—P. F. Schenck, Riceville, N. J.—The object of this invention is the saving of human life in case of ship wreck by supplying a life boat or vessel with fresh air for the respiration of passengers contained in the vessel which is otherwise hermetically sealed, while at the same time the sea water shall be effectually excluded.

MACHINE FOR DRESSING LEATHER.—Charles Korn, Wurtsborough, N. Y.—This invention consists in the arrangement of a cleaner and sharpener by which each knife, which is secured to an endless apron, is cleaned and sharpened, after it has served to shave or whiten the skin of leather. The said sharpener and cleaner are combined in one sliding block, and are made self-acting and can be adjusted to knives of different sizes. When a knife has been cleaned and sharpened, the sliding block returns to position to operate the next knife, and so on, the whole device operating automatically.

CUT-OFF CONNECTION FOR STEAM ENGINES.—T. S. Davis, Jersey City, N. J.—This invention consists in the use of a scroll or inclined plane, actuated by the governor in combination with a bar or rod or its equivalent, arranged to operate in connection with the ordinary link or other valve or cut off motion and in a plane or direction at a right angle or nearly so, to and against the said scroll or inclined plane whereby the governor is given the power or means requisite to overcome and hold steady the link under all circumstances of friction slip of block, etc., as by the connection between the link and scroll or inclined plane, the thrust of such connection is taken up on the faces of the said incline or scroll, consequently preventing all vibration of the balls of the governor, except what is directly due to an increase or decrease in the speed of the engine.

LATHES FOR TURNING AND CUTTING SQUARE AND BEADED WORK.—Frederick Baldwin, Brattleboro, Vt.—This invention consists in the employment or use of rotating cutters in connection with a rotating pattern, a hollow stationary mandrel, and feeding device, the several parts being made to work automatically, whereby a machine is obtained capable of being operated rapidly and at the same time performing its work in the most perfect manner.

BRICK MACHINE.—Jonathan Mills, Des Moines City, Iowa.—This invention relates to the construction and to the general arrangements of the parts of a brick machine whereby many of the objections which have hitherto been met with in the manufacture of brick, are overcome.

METHOD OF CONDENSING FOUL VAPORS.—Samuel Davis, New York City.—This improvement relates to the manner in which the steam and vapor generated in fat boiling and other processes of a similar nature are condensed and rendered harmless.

COMPOUND FOR TEMPERING STEEL TOOLS.—William G. Esser, Milwaukee, Wis.—The object of this invention is to furnish a compound for tempering stone cutters' tools and especially mill picks so that they shall be much more durable than when tempered in the ordinary manner.

WAGON SPRING.—John G. Ostrom and Garret C. Landsing, Rhinebeck, N. Y. Patented June 11, 1867.—The object of this invention is to provide a very simple and cheap but a very elastic spring or rather set of springs for wagons and sleighs, and the invention consists in arranging a series of pairs of flat wooden springs each pair being laid at right angles across the pair above so that the more sets of springs are applied the greater will be the elasticity of the whole.

INSULATOR FOR TELEGRAPH WIRES.—Alfred B. Day, Oak Creek, Wis.—The object of this invention is to provide an insulator for telegraph wires with a dead air chamber by combining a wooden plug, a number of glass lugs and a wooden disk in such a manner with a cast-iron shell that only a very small orifice is left around the pin hook for the atmosphere to enter, and any moisture entering by that orifice will, by reason of the lower temperature of the iron shell condense and settle thereon leaving the wooden plug and the glass lugs very nearly in a dry and non-conducting state.

MACHINE FOR COATING HATS.—J. F. Mathias and D. M. Legat, Paris, France.—This invention relates to a machine for felting hats in which the hats are fitted upon suitable supports arranged upon a revolving shaft, the material being thrown upon them by means of a fan, the whole being enclosed in an air-tight box.

CLOTHES BAR.—Hosea Willard, Vergennes, Vt.—This invention relates to a new and improved device for holding clothes for drying and is an improvement on a device for a similar purpose for which Letters Patent were granted to this inventor bearing date Feb. 18, 1862. The original invention has its bars applied to the bracket in such a manner that they can, when not desired for use, be folded upward only, and the within-described invention consists in applying the bars to the brackets in such a manner that they can be folded either upward or downward as desired, and which is an improvement from the fact that in many instances the bars when folded upward are very inconvenient to reach and in that case may be folded or turned downward.

AMALGAMATOR.—R. W. Howard, Warwick, R. I.—This invention relates to a new and improved device for amalgamating gold and silver and it consists of a revolving or rotating pan placed within a stationary or fixed one the former having its exterior provided with spiral flanges and the bottom of the stationary or fixed pan provided with a gutter or trough at its edge whereby the pulp or crushed quartz is kept in contact and thoroughly incorporated with the quicksilver and the latter amalgamated with all the precious metal contained in the former.

ESCAPEMENT FOR TIME PIECES.—Hermann Reinecke, New York City.—This invention relates to mechanism which combines the advantages of the detached escapement with the lever escapement, the balance being so arranged that it receives an impulse from the escape wheel while it swings in one direction only, while it is perfectly free from the power of the mainspring during the other half of its motion and the impulse produced by the escape wheel is transmitted to the balance by means of a lever.

NIPPLE SHIELD.—C. H. Wilder and J. M. Wilder, New York City.—This invention consists in the arrangement of a screen in combination with a nipple shield in such a manner that by said screen the nipple is prevented from being drawn out any further than desirable and the usefulness of the nipple shield is materially improved. The screen is made adjustable so that its position can be regulated to correspond to nipples of different sizes.

DOUBLE SEAMING MACHINE.—John Rupp, New York City.—This invention relates to a machine which serves to attach the bottom to a kettle, pot or other vessel of a cylindrical, conical or other desirable form or shape. Said vessel is placed in a reverse direction on a disk from the center of which rises an adjustable standard intended to support the circular blank of the bottom. The blank is held in a concentric position by the lowest speeds of three or more cone rollers and by the action of the successive shoulders of said cone rollers in combination with suitable burring rollers the operation of doubleseaming is accomplished, the disk which supports the body of the vessel being mounted on a vertical shaft to which a revolving and also a rising and falling motion can be imparted.

BUTTON FASTENING.—Benjamin Moser and David Yellott, Brooklyn, N. Y.—This invention relates to an attachment for buttons, studs, etc., whereby they can be so secured to the clothing as to render it impossible for them to be lost.

MANUFACTURE OF ORNAMENTAL FEATHERS.—Frederick Emil Schmidt Hoboken, N. J.—This invention relates to a new manner of coloring feathers so that the same may be prepared for the market, and be used on ladies' and children's wearing apparel and for other ornamental purposes.

BURGLAR ALARM.—Henry R. Robbins, Baltimore, Md.—Patented June 18, 1867.—This invention consists of two spring piston hammers, so arranged as to be released by the opening door, which touches the trigger and causes them to explode the caps. The nipple has a projecting point, and the hammer a corresponding depression, to secure explosion. The instrument is attached to the door jamb by penetrating points or by hooks.

COMBINED SEED AND GUANO PLANTER.—Thomas W. White, Milledgeville, Ga.—Patented June 18, 1867.—This invention has for its object the construction of an instrument which may be used either as a common plow or for sowing guano or planting cotton, seed, corn, peas, etc., and which shall be light, simple, cheap, and durable.

COMBINED COTTON PLOW, IRON TURNER PLOW, AND SCRAPER.—T. P. Warren, Norfolk, Va.—Patented June 18, 1867.—The object of my invention is the construction of an instrument which, with slight and easily made changes, can be used as a cotton plow, an iron turner plow, or a scraper, at the pleasure of the operator.

BOLT TRIMMER.—Henry Howe, Oneonta, N. Y.—This invention relates to an improvement in bolt trimmers, and consists of two bars of iron or steel, flattened at one end and pivoted together, the lower bar having a hole in its flat end to hold the nut while the cam shaped sharply-beveled flat end of the upper bar is forced over it.

PESSEY.—W. G. Grant, Clyde, Ohio.—This invention consists in making a pessary hollow, and of such an internal shape as to fit about and encase the neck to the uterus when placed thereon, and of a conical or tapering shape upon its outside, whereby it can be the more easily inserted or withdrawn according as may be desired, and, when worn, rendered the more comfortable and agreeable in feeling to the person or wearer.

SPECTACLES.—George D. Edmondson, Watkins, N. Y.—Patented June 18, 1867.—Each lens consists of two pieces of different magnifying powers, and set in different planes. The line of division between the two is the horizontal mid section, the upper portion is of greater focal distance for viewing more distant objects. The plane of the upper portion is at right angles to that of the bows, and at almost the same angle to the axis of the eyes when adjusted horizontally, the plane of the lower halves is inclined to the former so as to be about at right angles to the axis of the eyes when declined in reading, etc.

BEADSTEAD FASTENING.—Jeremy B. Wardwell, Georgetown, D. C.—Patented June 18, 1867.—This invention consists of the dovetail tenon on the end of the rail, being received within a mortise plate on the post; one side of the mortise rotates to open or close it upon the tenon.

PRINTER'S INK.—Moritz Ruos Weisberger, St. Paul, Minnesota.—Patented June 18, 1867.—This invention consists in combining the mineral resin found in the neighborhood of Petroleum, Ritchie County, West Virginia, in due proportions with the mineral lubricating oil pumped from wells near Parkersburg, West Va., and with lampblack, forming several varieties of excellent printers' ink.

BRAKES FOR WAGONS AND OTHER VEHICLES.—George S. Zeigenfuss, Doylestown, Pennsylvania.—This invention relates to an improvement in brakes for wagons and other vehicles, and consists in an arrangement for locking the wheels from the top of a load or side or rear of the vehicle, or from two or more of the said positions upon the vehicle together, as may be most convenient, independently of each other.

FURNACES FOR BURNING PYRITES WITHOUT THE AID OF FUEL.—John Hughes, Edgewater, N. Y.—This invention relates to a new and improved plan of construction of furnaces or kilns for burning iron or other pyrites to expel the sulphur either for the purpose of utilizing it in the manufacture of sulphuric acid, or for extracting the metals which may be associated with the mineral. The pyrites are burnt in my improved furnace without the aid of fuel to maintain combustion after the fire has been started with coke or other suitable kindling stuff by the ignition of the sulphur alone.

Business and Personal.

The charge for insertion under this head is 50 cents a line.

Planing Mill and Sash, Door, and Blind Factory Wanted.
Address A. P. Smith, Sterling, Ill.
Jos. Lees, 285 Avenue B, New York City, alleges that he has valuable improvements in manufacturing gas from coal, and he wishes to engage with some company where his services may be appreciated.

Rolling Mill Manager Wanted.—Competent persons desiring a situation will address with references Marshall P. Smith, Baltimore, Md.

Wanted.—Experienced agents to sell the rights of our Clothes Drier patented Jan. 22, 1867, and illustrated in the SCIENTIFIC AMERICAN of April 13th. 50 per cent will be given to good agents. Address patentees Seeman & Catrow.

Answers to Correspondents.

CORRESPONDENTS who expect to receive answers to their letters must, in all cases, sign their names. We have a right to know those who seek information from us; besides, as sometimes happens, we may prefer to address the correspondent by mail.

SPECIAL NOTE.—This column is designed for the general interest and instruction of our readers, not for gratuitous replies to questions of a purely business or personal nature. We will publish such inquiries, however, when paid for as advertisements at 50 cents a line, under the head of "Business and Personal."

R. L., of Pa.—The magnetic needle is often used with success in searching for iron ore. It should be 5 or 6 inches long and be so suspended that it may be free to dip. The needle, however, is effected only by magnetic ores.

C. S., of Mich.—"With what velocity does steam pass from the boiler to the cylinder, the pipe being 4 inches in diameter and 15 feet long?" The velocity depends upon the amount of steam used by the engine. If the engine takes a pipe full in a minute, the velocity is 15 feet per minute; if a pipe full in 10 seconds, it is 90 feet per minute, etc. The old engineers who propound this question to C. S. are perhaps thereby poking fun at him.

W. G. R., of N. Y.—A copper color is given to small iron castings by well cleaning them in dilute acid, rinsing in water, and dipping in weak solution of sulphate of copper, or tumbling in saw dust moistened with the solution of sulphate of copper. After the coppering the goods must be well rinsed in water. The film of copper secured in this way is exceedingly thin and will not bear much rubbing.

G. N. T., of N. Y.—The device for hanging yard gates so that they shall close by their gravity is quite common. It may be seen in almost every large village.

G. C. C., of Md.—"Will a current of air forced through hot oil or lard in bulk, reduce the temperature of the oil or lard below that of the air?" No. Singular question!

M. B., of O.—There is great confusion in the United States in the matter of weights and measures. Congress in 1850 revised the subject and authorized a system to be followed at the custom houses and other federal institutions. Many of the States have adopted the national standards, but among the others there is no uniformity. The national gallon is of the capacity of 230 cubic inches, and this is the only gallon which is recognized by the U. S. authorities. Besides this there are in use at least four other measures of different capacities called gallons. The adoption of the metric system is the easy way of escaping from the perplexities of the present systems.

A. B. N., of Mass.—We are not aware that any use is made in practice, of the decomposition of water by electricity. It is in fact one of the most expensive methods of obtaining the elements of water.

F. V. R., of N. Y.—You can give india-rubber a coating of gutta-percha, by dissolving the gutta-percha in a volatile solvent like bisulphide of carbon, and applying the solution in the manner of a varnish.

P. Y., of Wis.—Your third communication on The Crank Motion is received and with the others placed upon file. We consider the subject has been sufficiently ventilated in these columns and disagree with you in the opinion that your article would be read by many with interest. The whole subject was ventilated in our columns at least ten years ago, and we do not care to reproduce time after time, projects which alter the lapse of ten or a dozen years have brought forth no practical results.

W. H. A., of S. C.—The glaze of pottery is a glass which is a little more fusible than the ware. The composition of the glaze and the manner of putting it on should vary with the use to which the ware is to be put. A potter therefore should understand the properties of the ingredients employed in glazes, and should be able to determine the proportions in which he should use them.

R. M., of Pa.—The weight of a bushel of bituminous coal as established by statute in your state is 80 lbs. avoirdupois; of cannel coal 70 lbs.

W. R. S., of Pa.—Ordinary or saturated steam will be condensed to water by any increase of pressure, or diminution of heat. Superheated steam is ordinary steam which has been further heated, and maintains its elastic condition under increased pressure in proportion to the amount of over heating.

D. B. T., of O.—Pressure and temperature have practically no effect on the specific heat of air or water. In solids the increase of specific heat by increase of volume or temperature is quite notable, and it is likely that the same causes will increase the specific heat of air and water, but it is known that the increase is so small that it can never be accurately determined by direct experiment.

T. R., of N. Y.—Ink stains may be removed by applying a weak solution of oxalic acid. Care should be taken to wash out also the excess of acid as it is corrosive to organize matter. . . . The sun happens to be nearer to the earth in winter than in summer, and the reason that we feel less of his heat in winter is, that the rays strike the atmosphere at a smaller angle and are consequently reflected off into space. . . . It is a commendable practice to heat crucibles very gradually. Careful operators will get about twice as much service out of crucibles, as those who put them cold or damp directly into an intense fire.

A. L., of N. Y.—Coal tar pitch (the residuum of coal tar distillation) is one of the most approved roofing materials. It is most often used in combination with felt or paper. A shingle roof is rendered more durable by painting it with coal tar. The preservative substance of the tar is carbolic acid, which being volatile is not retained in the pitch. But remember that a shingle roof is more combustible when coated with tar.

W. C. G., of Iowa.—The heating power of a battery is proportioned to the size of its plates, while the physiological effect is proportioned to the number of pairs of plates. We would not venture upon advice as to size, construction, and cost of a battery for heating purposes without knowing the details of the use. You wish to heat a strip of platinum. Is the strip exposed to a current of air? Is it to be brought into contact with any liquid or solid substance?

E. B., of Pa., has a wall which is so damp that paper pasted on it will peel off, and wishes to know if silicate of soda will render it water-proof. An application of silicate no doubt will improve the wall and especially if it be of limestone, and we advise him to try it. But it cannot be expected that the process will be as thoroughly effectual as the ordinary lath and plaster.

W. B., of Wis.—In melting zinc care should be taken that it does not oxidise by overheating or by too much exposure to the air. It is a good plan to keep the surface of the molten metal covered with fine charcoal or sawdust. You can improve your injured metal by remelting and stirring saw dust in to it.

R. A. D., of Wis.—"People out here claim that a raft of lumber will travel faster than the current, and that a raft of logs will go faster than the lumber." People have strange ideas out there.

G. K. S., of N. Y.—Gutta-percha is soluble in benzole and turpentine, and shellac in alcohol, but the two solutions do not mix kindly. A good common solvent of shellac and rubber, or gutta-percha, is still a desideratum.