

PAPER MACHINE.—Isaac Jennings, Fairfield, Conn.—This invention has for its object to so improve the construction of ordinary paper machines that the paper may be removed from the rollers in the form of tubes either straight or tapered for the formation of the bodies of buckets, barrels, etc., or to form pipes or tubing.

HAY FORK.—E. J. Fenn, Medina, Ohio.—This invention has for its object to furnish a simple, convenient and effective fork for handling hay with horse or other power, and which shall at the same time be easily operated to load and unload it.

HORSE POWER HAY FORK.—William Hannah, Middlefield Center, N. Y.—This invention relates to a new and improved method of constructing hay forks for the unloading of hay by the power of a horse, whereby the same is more rapidly and economically done.

STOVE.—S. W. Gibbs, Albany, N. Y.—The object of this invention is to produce a self-feeding, base burning stove for heating purposes of such formation as will allow a free escape for the gases generated, and which shall allow a free supply of fresh air to the fuel at the base of the feeder.

REFRIGERATOR.—Anthony B. Sweetland Fitchburg, Mass.—This invention relates to an improved refrigerator for household or other use and it consists in the method in which the ice is supported therein and the provision made for properly distributing the ice water.

MILK CAN.—David W. Shaw, Baltimore, Md.—This invention relates to a method of constructing cans for transporting and keeping milk and other articles and it consists in forming the neck of the can so that the milk may be secured air-tight and the cover locked in its position, thus protecting the milk from the action of the atmosphere as well as from being stolen, and preventing the churning of the milk during transportation.

HORSE HAY FORK.—E. I. White, Locke, N. Y.—This invention has for its object to furnish a neat, simple, convenient, and effective hay fork, and which shall at the same time be strong, not liable to get out of order, and easily operated.

HOP VINE SUPPORT.—Peter J. Fuller, Clarksville, N. Y.—This invention relates to an apparatus for training hops, and consists of a short pole secured in the ground, and of a series of arms pivoted to the upper part of the same. The arms can be brought to an upright position, and are then clamped by means of hooks or other equivalent devices, so as to form rigid supports for the growing hops. Four more or less such arms being arranged on each pole. An equal number of vines can be framed on each pole. The arms are, by means of the aforesaid hooks, so firmly held that they need no further fastening or support. When the hops are to be removed, the arms are swung down, and the vines can then very easily be stripped off.

MEAT CHOPPING MACHINE.—Henry Obrecht, Mahoney City, Pa.—This invention relates to a new machine for chopping meat or other articles, and consists in imparting to the cutter or cutters, beside an up and down reciprocating, a slow rotary motion. The cutters are attached to the lower end of a vertical shaft, which is swiveled in, and suspended from an up and down reciprocating block or other device, said shaft also passing through the center of the wheel, to which slow rotary motion is imparted, the shaft or wheel having a leather so that the shaft is turned by the wheel, and may still move up and down through the same.

WOODEN PAVEMENT.—Duncan McKenzie, Brooklyn, N. Y.—This invention relates to a new and useful improvement in wooden pavements of that class which are constructed of blocks laid with the grain in a vertical position and placed in parallel rows with a space or recess allowed between the rows, to receive sand and to serve as a foothold for horses. The invention consists in connecting the rows of wooden blocks by means of dovetail wooden strips attached to the sides of the blocks and arranged in such a manner that when the pavement is laid it will be retained in proper position or at the proper level, the several blocks sustaining each other throughout the entire length of the pavement.

COUPLING RAILROAD CARS.—James M. Everhart, Pittston, Pa.—This invention relates to a new and useful improvement in coupling railroad cars, and has for its object the avoidance of all slackness or play between the coupled cars and the consequent jarring, jerking, etc., attending the said slackness or play.

APPARATUS FOR DRAWING WATER.—W. P. Walling, Swartz Creek, Mich.—This invention relates to a new and improved apparatus for drawing and conveying water from a spring or brook to any convenient distance, and is designed to avoid the labor of carrying water by hand from brooks or springs which are at some distance from a house or any place where the water is to be used.

GRAIN SEPARATOR FOR THRASHING MACHINES.—Daniel S. Yeakle, Dillinger'sville, Pa.—This invention relates to a new and improved separator for separating the grain from straw as said substance is discharged from the thrashing cylinder of a thrashing machine, whereby the work above mentioned is performed in a perfect manner.

LOCKING NUTS.—Samuel Garber, Beaver, Pa.—This invention has for its object to furnish a simple and effective means for keeping nuts upon bolts that are subject to a frequent or continuous jarring, designed especially for securing the nuts upon the bolts that hold the fish plates to the sides of the rails of railroad tracks, but which are equally applicable to nuts upon bolts in other situations.

PIPE TONGS.—James M. Everts, New Haven, Conn.—This invention consists in providing a long slot in one of the jaws when the joint is to be formed with the other jaw, for sliding the pivot, which is fixed to the other jaw, back and forth, which slot, for about half the distance through the jaw, is perpendicular to the face of the jaw, and for the other half inclined thereto in such direction as to present a section of a V form, or the section of a triangle of which the base is the longest side. The focus of these said inclined walls of the slot are serrated and a stud fitted to the axial pin and provided with corresponding angular serrated sides, and also with a rectangular portion to fit into the rectangular portion of the slot is interposed in the said slot between the jaws and constitutes the means of securing the jaws at any position with reference to each other within the angle allowed by the said slot.

HOG TROUGH.—Caroline M. Rolfe, Laconia, N. H.—This invention relates to a new and improved hog trough of that class which are provided with pivoted covers so hung and arranged that by adjusting the latter in one position the trough will be exposed at the outer side of the pen or sty and rendered accessible for the pouring of food into the trough, while the latter is shut off from or rendered inaccessible to the hogs in the sty, and when the cover is adjusted in the other position the trough is rendered accessible to the hogs. The invention consists in a peculiar construction and arrangement of the cover, whereby a very economical and durable trough of the kind specified is obtained.

VELOCIPÈDE.—George, William, Alfred, Edward, and Frederick Hanlon, New York city.—The object of this invention is to so construct a two-wheeled velocipède that it can be used by various sized persons, and that it may be balanced by the addition of a third wheel, for persons learning to use it.

STEEL SHANKS FOR BOOTS AND SHOES.—Henry Briner and Emil Briner, Manhattanville, N. Y.—This invention relates to an improvement in the strips of spring steel or other spring metal called "steel shanks," for stiffening the bottoms of boots and shoes under the hollow of the foot, or for supporting and keeping in place that portion of the leather bottoms of boots and shoes.

WINDOW MUSKETO BAR.—C. T. Warren, Linden, N. J. Patented June 30 1868.—This invention relates to the manner in which musketo bar, gauze, or netting is operated, so as to prevent the entrance of those pests into a room through the windows, and it consists in operating the bar (either rolling up or unrolling it) by the act of raising or lowering the sashes, by means of fixed cords and rollers.

LADDER AND SCAFFOLD FOR PAINTING AND OTHER PURPOSES.—Robert Rowan, Parnassus, Pa. Patented June 30, 1868.—This invention relates to an apparatus for facilitating the operation of painting buildings, and which is adapted to other uses where work is to be performed on buildings in elevated situations.

DEVICE FOR REPAIRING BARRELS.—E. W. Gillman, Hunter's Point, N. Y. Patented June 30, 1868.—This invention consists in binding the barrel with

adjustable metallic bands and thereby holding such barrel or vessel together, when the hoops are removed therefrom, so tightly that leakage is prevented, and so that the broken or decayed stave or staves may be removed and other sound staves be inserted in place thereof.

MATCH SAFE.—Alfred Hoyt, New York city. Patented June 30, 1868.—The object of this invention is to so form a receptacle or box for keeping matches, and conveniences for lighting the same, that the matches shall be kept dry and not exposed to moisture from the atmosphere, and so that facilities shall always be at hand for lighting the match.

LETTER BOX.—D. P. Jordan, Chicago, Ill. Patented June 30, 1868.—This invention relates to an improvement in the method of receiving a securing letters, papers, etc., and it consists in a novel combination of a letter and newspaper box.

INK.—D. C. McNeil, Osceola, Mo. Patented June 30, 1868.—This invention relates to a new and improved ink, whereby the ink when used on paper is invisible, no writing or marks appearing until the paper is exposed to the fire.

BUTTONHOLE SEWING MACHINE.—Henry E. Reynolds, Bristol, R. I. Patented June 30, 1868.—The object of this invention is to furnish a machine by which buttonholes in clothing may be worked and completed with the same facility with which any other kind of sewing is done on the same garments.

GRAIN DRYER.—Wm. Standing, Cairo, Ill.—The object of this invention is to accomplish the drying of grain in an expeditious and effective manner, and is designed for use in steam grist mills where the waste steam from the engines may be utilized in drying the grain, but is equally applicable in other situations where steam can be obtained.

It consists in general terms of a steam chamber containing grain cylinders through which the grain is passed, and around which cylinders is a steam space.

It is provided with valves for adjusting the rapidity of the passage of the grain through the said cylinders, and perforated wire cloth tubes located within the grain cylinders through which an upward current of air passes to assist in drying the grain, and to bear away the moisture expelled from the same.

It is further provided with a receiving chamber at the base of the apparatus which is formed with lateral openings to admit the air to the lower ends of the said perforated tubes, together with other devices perfecting the whole.

BRICK AND MORTAR ELEVATOR.—Herman Spiro, Knoxville, Tenn.—The object of this invention is to accomplish the raising of brick and mortar for building purposes, and to present the same in a position conveniently accessible to the builders upon the scaffolding.

HOPPER SHOE FOR GRIST MILLS.—W. P. Wyche and Young P. Dickson, Brookville, N. C.—This invention relates to an attachment for grinding mills, and is designed to sift or separate the trash and other foreign matter from grain before it enters the hopper. It consists of a vibrating sieve hung above an inclined apron, and both actuated by some suitable mechanism forming part of the mill machinery.

CATHARTIC LOZENGE.—William M. Du Bois, Poughkeepsie, N. Y.—This invention consists in the preparation of a medicinal bark, having cathartic properties, in the convenient and palatable form of a lozenge, pill, or bolus, by which it is more easily and conveniently carried and administered.

COAL SCUTTLE.—Thomas Scantlin and James M. Scantlin, Evansville, Ind.—This invention consists in forming the bottom of a coal scuttle of cast iron, formed with diagonal ridges, which form a central leg at their intersection, and also serve to strengthen the bottom. The manner of uniting the sheet metal sides to the cast bottom is also improved.

PANEL FENCE.—C. W. Sprauell, Rome, Ga.—This invention consists, essentially, in the method of attaching fence panels, which is accomplished in a very simple and effective manner.

WEATHER STRIP.—Benjamin F. Averill, Dunkirk, N. Y.—This invention relates to weather strips for shutting out the drafts of cold air under the bottoms of doors. It consists of a moveable plate, provided with certain mechanism, by which the plate is made to shut downward and close the crack between the door and the sill, and to rise again when the door is swung open.

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 \$1.00 a line, under the head of "Business and Personal."

All reference to back numbers should be by volume and page.

J. A. P., of Wis.—Your explanation of the swing is too complex and is partially erroneous; the whole question can be disposed of in a few lines, by considering the shifting of the center of gravity by the person in the swing.

J. A. H., of Ark.—Paper boxes may be made waterproof in a very easy manner by applying a thick coat of turpentine, benzine, or alcohol varnish.

A. T. Y., of Pa.—A novel substitute for plastering is a paste of the fiber of prairie grass or pampo, it is similar to paper pulp, but much cheaper; it may be mixed with some adhesive substance soluble in water. When required to be fireproof mix it with waterglass.

J. H. B., of Ohio.—It is very doubtful if our courts of law would sustain a patent granted under such circumstances. A good deal of consideration is due to the claim of an original inventor, but there is no good excuse for so many years' delay in asserting his rights to a patent.

F. N., of Ohio.—The loss of temper in a scythe from exposure to the rays of the sun in this latitude would we think be scarcely appreciable. We know of no manual that treats of brickmaking. It is an art that must be learned by practice.

S. W. B., of S. C.—Siphons may be used for transferring water over any height less than 34 feet theoretically, practically about 32 feet may be relied upon. No doubt they might be substituted for the floodgates and trunks of which you speak, but we doubt whether it would be profitable to do so.

J. E. V., of Ohio.—We prefer a solution of gum tragacanth in water, with a little alcohol to prevent souring, to any other ready made mucilage. It is not, however, a fluid, but a paste.

J., of La. asks, "can ice be produced in a vacuum, or in other words, will water freeze if the air is taken from it?" No; the presence or absence of air does not produce congelation. Rapid evaporation of moisture tends to refrigeration, but the total absence of air does not necessarily produce congelation.

O. T. P., of Tenn. says, "I am running an engine the boiler of which is fed with water from the coal bank, the water evidently containing iron and sulphur in solution, which seems to have a bad effect on my boiler. What can I do to neutralize this effect?" No neutralization of the iron is required; it is perfectly harmless. As for the sulphur, perhaps nothing is better than common washing soda to neutralize its effects. But the use of this alkali is troublesome and expensive. The best remedy in this case would be to procure feed water from a purer source.

Z. McM., of Mo. asks the best method of dressing deer skins, as he is unable to obtain a skin that has not been damaged in dressing. The "burning" of leather is not uncommon from the use of strong lime as an alkali. In dressing deerskins and the tender pelts of our smaller game and domestic animals some milder alkali, as washing soda or pearl ash is preferable to lime, to be followed by an application of a solution of alum.

C. H., of Pa. tells of a practical sawyer ripping up some blocks of wood with a circular saw, and finding that a high speed of the saw prevented its cutting. He wonders at it, and asks the wherefore. Probably the cause is the clogging of the teeth, the dust not having time to deliver, if, as stated the speed was 6,000 or 7,000 revolutions per minute. In this case as in many others "more haste less speed."

E. A., of Conn.—Bodies float in fluids when their weight is equal to the sustaining fluids bulk for bulk. When their weight is less than the fluids in which they are placed bulk for bulk they will rise to and project from the surface. Therefore if a hollow ball containing air floats upon and projects from the surface of any fluid, it will when the air is removed from its interior, float still higher as the weight is diminished, by weight of the air removed. A hollow bar of iron will not sustain as much weight in any way as a solid bar of the same diameter. A hollow bar will however sustain within certain limits more weight, when its ends are supported, and it sustains more pressure in a horizontal position, than a solid one of the same weight owing to a better distribution of the fibers to meet the strain. Another reason is that the central portions of iron bars are not so strong in proportion to their weight as the surface parts. The pressure upon the inside of a balloon from the contained gas is equal to the resistance offered by the containing silk and network, and the pressure of the external air.

G. M., of Ill. thinks he has a theory original with him in regard to the cause of steam boiler explosions, namely, electricity in the boiler. Assuming electricity to be a cause of boiler explosions he proposes the insertion of pointed copper conductors, of wire, around the safety valve to conduct this dangerous fluid from the interior of the boiler to the external atmosphere. We have published enough about this theory until we have facts which are really valuable.

J. B., of Mass.—Iron, steel, and other metals, polished, may be preserved from rusting while unused by a coating of paraffine, or oilard or tallow (not salted) mixed with powdered resin in the proportions of eight of lard and two of resin, applied while hot.

Business and Personal.

The charge for insertion under this head is one dollar a line.

Marshall's line engraved portrait of Gen. Grant. This portrait is commended in the highest terms by Mrs. Grant, Hon. Schuyler Colfax, Gen. Sickles, the artists, Huntington, Durand, and Elliott, and many others. It is the only authentic and satisfactory portrait of our next President that has been issued. Agents for its sale are wanted everywhere. Address Ticknor & Fields, Publishers, Boston, and 63 Bleecker st., New York.

S. S., Wis.—M. M. Leahy, Milwaukee, is agent for Broughton's lubricators, oil cups, gage cocks, and oilers. Undoubtedly they are the best.

Millstone-dressing diamond machine, simple, effective, and durable. Also, Glazier's diamonds, diamond drills, tools for mining, and other purposes. Send stamp for circular. J. Dickinson, 63 Nassau st., N. Y.

Peck's patent drop press. For circulars, address the sole manufacturers, Milo Peck & Co., New Haven, Conn.

Universal filter well.—Drives and works successfully everywhere. Patented in Dec., 1867, by Oscar C. Fox, Georgetown, D. C.

The patent sweet fern and chemical lacing, as made by J. H. & N. A. Williams, Utica, N. Y., is far superior to the ordinary kinds of felt lacings made under the same patent.

Artificial stone—cheap and new invention—for sale. T. Hodgson, 7 Beach Place, Brooklyn, N. Y.

Patented articles a specialty.—All description of sheet and cast metal small wares made to order and introduced to the trade. Dies and tools for sheet metal, castings, etc., etc. J. H. White, Newark, N. J.

Olmstead's oilers are the best. Sold everywhere.

Want to buy—State right for brick machine. Address box 125, Toledo, Ohio.

Portable India-rubber bathing tub.—Can be carried in trunk. Also, formula for electro chemical bath for all diseases. United States for sale. Price \$2000. Address box 100, Clarksburg, West Va.

All buyers of tools and hardware should have Wilkinson & Co.'s illustrated catalogue. The illustrations are very full. Sent on the receipt of 50c. 2 Washington st., Boston.

Brick Machine.—Lafar's New Iron Clad has more advantages than any other ever invented. For descriptive circular address J. A. Lafar & Co., Albion, Orleans county, N. Y.

For services of experienced detectives to obtain evidence against infringers of patents address Box 581, Newark, N. J.

Adams' improved air cylinder graining machine, in operation daily and specimens of work at 41 Murray st. Send stamp for circular full particulars, prices, etc. Address Heath, Smith & Co., as above.

Prang's American chromos for sale at all respectable art stores. Catalogues mailed free by L. Prang & Co., Boston.

For breech-loading shot guns, address C. Parker, Meriden, Ct.

Livingston & Co., Iron Founders, Pittsburgh, Pa., make to order fine, smooth castings, of all kinds, from A No. 1, soft and strong iron. Give them a trial.

EXTENSION NOTICES.

Ann Winter, of Rondout, N. Y., administratrix, and William Winter, of said Rondout, administrator of the estate of Archibald Winter, deceased, having petitioned for the extension of a patent granted to the said Archibald Winter the 19th day of September, 1854, for an improvement in machines for sawing fire wood, etc., for seven years from the expiration of said patent, which takes place on the 19th day of September, 1868, it is ordered that the said petition be heard at the Patent Office on Monday, the 14th day of September next.

Jules Debaunays, of New York city, executor of the estate of Victor Beaumont, deceased, having petitioned for the extension of a patent granted to the said Victor Beaumont the 3d day of October, 1854, for an improvement in steam gages, for seven years from the expiration of said patent, which takes place on the 3d day of October, 1868, it is ordered that the said petition be heard at the Patent Office on Monday, the 14th day of September next.

Gardner S. Blodgett and Paul T. Sweet, of Burlington, Vt., having petitioned for the extension of a patent granted to them the 5th day of December, 1854, for an improvement in ovens for baking, for seven years from the expiration of said patent, which takes place on the 5th day of December, 1868, it is ordered that the said petition be heard at the Patent Office on Monday, the 16th day of November next.

Rebecca A. Marcher, of New York city, executrix of Robert I. Marcher, deceased, having petitioned for the extension of a patent granted to the said Robert I. Marcher the 22d day of May, 1855, for an improvement in tools for grooving moldings, for seven years from the expiration of said patent, which takes place on the 22d day of May, 1869, it is ordered that the said petition be heard at the Patent Office on Monday, the 21st day of December next.