Improved Governor for Steam Engines.

Carl Robert Rungvist, Stockholm, Sweden.—This invention consists, more particularly, in the use of an oscillating ring or plate, or of a combination of several parts, which are more or less symmetrically placed around a common center of support and gravity. This plate or ring is kept in continuous oscillation, so that any point on a line drawn from the center of gravity, at right angles with the plane of this plate or ring, will describe a circle in space. Various applications are made of this principle, the following of which appears to be the simplest: The disk is mounted by a universal joint upon a hollow support, through which a shaft carrying the three arms and buttons is fitted, a spring crowding said pins against the plate, and serving as equivalent for a weight. A pinion hung loose upon the shaft, meshes into a toothed segment, that is mounted upon a weighted crank lever from which the connecting rod extends to the valve. When the speed of the engine is increased, the increased friction on the buttons causes the loose pinions to act upon a lever in such manner as to move it to more or less shut the valve.

Improved Trimmings.

Welwood Murray, New York, city.—This inventor has patented three inventions of similar nature. The first consists of a trimming for dresses and other articles of wearing apparel for ladies, composed of a strip of muslin, lace, silk, or any other suitable textile fabric, with cross plaits arranged in groups of, say, four or five (more or less) plaits in a group, and plain portions between the plaits of about the same width as the groups thereof. The second invention consists of a reverse box-plaited and puffed trimming for dresses, etc., in which, by reason of the plaits of one side being made midway between those of the other side, they have the form of an ordinary box plait at one margin of the trimming, separated into two members at the other margin, and merged into the two adjacent box plaits thereat. The machine which is used for making this trimming consists of a pair of plaiting rollers with puffing teeth or formers in one, and sockets or dies in the other, and four plaiting blades for plaiting the cloth and pressing the plaits between the rollers. The third invention consists of a reverse side plaited trimming in which the plaits are folded in opposite directions at the margins, and, when desired, a puff is formed between the plaits at the edge. To make this trimming a pair of intermittingly rotating rollers is used, with puffing cogs or teeth, when the trimming is to be puffed, combined with a pair of folding blades or knives and a feeding guide.

Improved Car Coupling.

Warren B. Snedaker, Syracuse, N. Y.—A coupling hook is pivoted in the drawhead, so that it turns freely on a pivot rod. The long limb of this hook forms the coupling pin, and when the car is uncoupled is in nearly a horizontal position. When the cars come together, the end of the link strikes the center of the hook, which throws the long limb to an upright position. Before reaching this position, its end strikes the underside of a hinged cover and raises it so as to pass a shoulder. The cover drops by its own gravity, and confines the hook, so that the shoulder forms the abutment against which the link pulls. To uncouple the cars, the cover is raised by means of a chain. A forked weight bar is pivoted at its rear end, and its weight is brought to bear upon the short limb of the hook, by means of pins, to keep the hook and bar steady, and in position before coupling, or when the hook is turned down. The forks of this bar also drop upon the end of the link, and hold the link in a horizontal position, so that it is unnecessary to go between the cars to guide the link when coupling the cars together.

Improved Milk Cooler.

James Pearl, Lawrenceville, N. Y.—A water chamber is arranged on a frame by covering it with a layer of sheet metal, painted on both sides to resist the action of the water thereon. The water course is produced by longitudinal partitions, which connect by apertures at alternate ends, so that the water is compelled to take a circuitous course through said chamber. The cold water passes around the partitions, and is conducted off through an exit pipe. Another sheet of metal, painted on both sides, is placed on top of the water chamber, and attached to the main frame. The milk pan is placed on the cover, being cooled as readily as by being directly in contact with the water, zinc especially keeping the water cooler, and preventing the corrosion of the bottom of the milk pan. The milk pans are thereby kept dry, and last a great deal longer than when placed directly on the water. The top cover forms, also, a table, which allows the use of smaller pans, according to the quantity of milk obtained, keeping also butter and other articles cool, as they may be set thereon in any vessel.

Improved Automatic Hatchway Guard.

George E. Berry and Frank C. Pingree, Detroit, Mich.—This invention consists of a gate arranged to slide up and down in the posts or doorway of the elevator, and connected by cords running over guide pulleys with a tilting lever. The latter is moved by a pin on the upper end of the elevator carriage, and caused to raise the gate out of the way when the carriage comes up to the place for unloading and loading. When, by the passage of the carriage to a higher floor, the gate is allowed to fall, the descent is regulated by a pin on the lower end of the carriage, which passes above the lower end of the lever just before the upper pin escapes from the upper end. If the carriage descends without the upper pin passing above the lever, said pin regulates the descent. The gates closed below the carriage are opened by the lower pin on the carriage, and their closing is regulated by the upper pin.

Improved Curling Iron.

Joseph S. Morgan, Brooklyn, N. Y.—The object of this invention is to produce an improved curling iron, which is adapted to be conveniently used on every gas or other flame, keeping its polish and surface uninjured, and perfectly clean for use, and being easily handled with one hand, while the other curls the hair on the iron and manipulates it in the proper manner. This invention consists of a hollow metal tube, with a double elbowed handle applied to its larger conical base, which is provided with air channels for carrying up the flame to the full length of the iron, and also with diametrical side recesses having vertical openings, by which the extinguishment of the flame on the burner is prevented.

Improved Box Clamp for Tobacco Presses.

Thomas I. Robertson, Madison, N. C.—This invention consists of a clamp formed of two blocks, made of hard wood, notched across the grain upon their inner sides, and held together by two or more bolts. The ends of the blocks at their inner edges are rabbeted to form grooves to receive the screw posts. To the outer forward corner of the upper side of the rear part are secured plates, and suitable arrangements are provided so that the rear part will not be pushed back out of place while the clamp is being manipulated. The straps are arranged to prevent the parts from being worn by the heads of the bolts.

Improved Foot Warmer and Improved Artificial Stem for Cut Flowers.

John B. Craig, Perrysville, Pa.—This invention is an improvement in the class of portable heaters consisting of a metal case containing a block of soapstone or other material, which is removed when required to be heated. The invention consists in an arrangement of ribs and pins for supporting the block and holding it in place on the cover of the case. The pins prevent the block moving about in the box when the latter is being handled, and the ribs keep it from coming in contact with the cover, and thus unduly heating the same, thereby causing injury to the floor. The same inventor has also devised an artificial stem for cut flowers. It is the present practice of florists to stem flowers by attaching them to wooden splints by means of wire or thread. The improved device is formed of a wire, shaped spirally into the form of a hollow inverted cone, which is provided with a shank. To attach the device to a flower, the stem is drawn down through the coil until the latter embraces the base of the calyx, when the cone is compressed by slight pressure between the thumb and finger.

Improved Wheel Plow.

Fred Hasbrook, Stokes' Mound, Mo.—This invention has for its object to improve the construction of the wheel plow for which letters patent No. 138,839 were granted April 29, 1873. The invention relates to an arrangement of a rocking bar and pivoted rod in connection with the tongue and beam of the machine, for the purpose of adjusting them at certain angles to each other. By this construction the chain braces, in drawing the sulky, tend to press the forward end of the plow beam downward, and thus cause the plow to run deeper in the ground.

Improved Cutting Attachment for Sewing Machines.

William H. Sample, Albany, N. Y.—The object of this invention is to furnish an improved cutter attachment for sewing machines, by which fabrics of all kinds may be cut simultaneously with the stitching, and at suitable distances from the line of stitches, by the action of the machine. The instrument may, with slight variation, be attached to nearly every sewing machine, and consists of two upright arms, one of which is attached to the guide casing of the needle bar, and the other is connected loosely with the main arm of the sewing machine. The stationary arm carries at its lower end a cutter blade, which, together with a pivoted cutter blade operated by the reciprocating arm, cuts the fabric as the same is fed by the machine to it and the needle.

Improved Propulsion of Vessels.

George N. Jones, Philadelphia, Pa.—This improvement consists in propelling vessels by the alternate action of steam pressure and a vacuum, respectively operating and formed in a cylinder having a single orifice which is in communication with the water wherein the vessel floats, whereby the quantity of water in the cylinder is expelled and the same or an equivalant quantity readmitted in continuous succession through the aforesaid orifice. Thus no supplementary tube or passage is required to supply the steam and vacuum cylinder with the water to be expelled, but the inflow and outflow occur at the same point. The invention further consists in a valve and float mechanism connected with the cylinder, whereby the admission of steam is automatically regulated, as the water is expelled and admitted, thereby securing a proper and efficient action and allowing the steam pressure to be constantly applied.

Improved Automatic Lubricator for Car Axle Journal.

James Edward Bering, Newburgh, N. Y.—This invention consists in a method of automatically supplying the hot journals of a car axle with lubricating material by interposing, between the journal and a superposed lubricant holding-chamber, plugs fusible below that degree of temperature which will generate combustion.

Improved Implement for Capping Cartridges.

Henry M. Bronson, Sandusky, Ohio.—The object of this invention is to provide a convenient little instrument for capping the brass and paper shells used in the Parker and other breechloading shot guns, by which the operation can be performed in a quick, neat, and perfect manner. It consists of a tubular spring clamp, which takes hold of the caps and transfers them to the countersunk base of the shell by striking sharply the knob of a bolt with spiral spring sliding in the clamp.

Improved Accordion, etc.

Frederick Goetze and Donat Müller, New York city.—This invention consists essentially of the application of two "unisono" tuned reeds to every key of both key boards of a wind instrument in which the key boards form the sides of the bellows, as in an accordion, whereby one reed will sound by expanding and the other by contracting the bellows, and thus give the same note continuously as long as may be required. The invention also consists of sliding holders, in combination with the keyboard of such instruments, by which the bellows can be worked by the wrists of the player, thus leaving all the fingers free to work the keys, and allowing the hands to slide along the key boards, the instrument being supported at one end on the knees. The instrument thus improved is called an "aeolodikon."

Improved Slide Valve Mechanism.

Ebenezer E. Gilbert, Montreal, Canada.—The main slide valve has end tubes that slide upon closely fitting guide rods. These guide rods have rear flanges that hold them movably between guide brackets. When the friction between the valve and its seat creates wear, the valve is thus enabled to lower itself and automatically take up the wear. A clapping and disagreeable noise is prevented by the use of an auxiliary valve, peculiarly constructed, and arranged in the steam chest and over the main valve. This valve has two subjacent cavities which alternately connect with the exhaust by a vertical passage, and are separated by a partition. The steam passes through ports into and out of the tubes, to alternately force the main valve in opposite directions, and recesses, over which pass the ends of the valve, to admit steam into chambers and thence to the tubes. The object of this arrangement is to cut off the egress of steam from these cylinders in time to form a cushion to prevent their percussive impact upon the rods. In order to render the valve self-adjusting, to take up its own wear, and also to drop according to the wear that takes place on the main valve below it, an auxiliary valve is provided, which becomes automatically adjustable by its own gravity, both as respects its own wear and that of the main valve.

Improved Link Guide for Car Couplings.

William Warinner and William L. D. Johnson, Creelsborough, Ky.—The bumper heads of the cars are constructed in the ordinary manner, except that their cavities are deepened, and have blocks inserted in them. The blocks have stems formed upon their inner ends which enter holes in the inner parts of the bumpers, and around which are coiled the springs by which the blocks are held forward. Upon the forward end of the blocks are formed flanges to support the pin when withdrawn. A curved frame, upon the inner sides of the side bars of which are formed grooves, receives the side bars of an inner frame. The rear end of the curved frame is hinged to the rear part of the bumper head, and its forward part is supported by a yoke, the side bars of which pass through guides attached to the bumper head. The frame can be raised and lowered, according to the hight of the adjacent car, by simply turning a screw. To the outer end of the inner sliding frame is attached a plate which, as the said frame is drawn outward, comes into such a position as to support the link in a horizontal position. A weight and cord of sufficient size are arranged to draw the frame forward as soon as released. The weight is supported by a small coiled spring, arranged to relieve the jar when the cars are run together, and the weight is drawn upward. The sliding frame is held when pushed inward by a lever pawl pivoted to the frame and held to its place by a spring. The forward end of the lever pawl projects at the side of the bumper, so that it can be readily operated to release the frame and allow it to be drawn forward by the weight.

Improved Toy Blocks for Object Teaching.

Nicholas Muller, New York city.—This invention relates to apparatus designed to facilitate the study of geometry, in the formation of geometrical figures, and to familiarize the minds of both the young and old with such figures, and also to afford recreation and amusement; and it consists in two triangular shaped blocks, made of any material and of any size, by the use of which (and no other) various figures are formed by laying them together.

Improved Standard for Stools, Tables, etc.

Samuel H. Newcomb, Port Williams, Nova Scotia.—The invention consists in an improved stand adapted to support different articles of furniture. The supporting stand consists of four curved legs, of which one is firmly connected to the central shaft. The other legs are hinged sidewise to each other, so as to fold nearly parallel to the stationary leg, and they are arranged to close accurately around the shaft. They are also provided with recesses around the shaft, and projecting lugs at their outer top ends. These lugs enter recesses of a round support which rests on the legs and binds them strongly together. A central circular aperture of the support, together with the recesses around the shaft, allow the insertion of the sockets of the different parts which are to be connected to this supporting stand. A hook of the outer folding leg closes into an eye at the lower side of the support, and prevents thereby the lifting off or otherwise disconnecting of the same.

Improved Plow.

Andrews Riviere, Barnesville, Ga.—The standard bars are set into recesses of the beam, pivoted to it by a strong cross bolt, and are connected rigidly at their lower ends so as to form a strong, rounded-off support for the under side of the plowshare. A curved brace is rigidly attached to these bars, passing up between them and through a recess of the beam, above which it is provided with perforations and locked, according to the angle of inclination under which the plowshare is set. An adjusting rod passes between standard bars along the rear of the brace and up through the beam, and is raised or lowered by a crank. Different shares may, in this manner, be attached to the plow, as necessitated by the various requirements of farming, and their angles of elevation and depression be determined by simply adjusting the fore end of the brace.

Improved Slide Valve.

William Stephens, Pittston, Pa.—The valve is truncated and wedge-shaped. The walls between which it is arranged constitute a double seat with double induction ports and exhaust. The steam enters ports at the ends of the valve, which moves far enough to open them in that way. At the lower edge the valve rests on a flat seat, and at the top it may or may not be provided with flanges to bear on the top of the seat. It is fitted on these parts so that it just wedges into the cavity between the seats steam tight. Channels are in the corners of the valve at the lower edges, and in the corners of the seat at the top, to admit steam as a check, which prevents the leaking of the valve to some extent. Such channels can also be employed limit or balance the down pressure. It is believed that the pressure on th top will be governed by the area of the cross section of the ports at the line and it can be reduced to the requisite amount for keeping the valve steam tight by such channels, admitting the steam under it. The double seats afford greater length of ports with a valve and cylinder of a given size than can be had with the ordinary arrangement. The double ports will unite in one passage in any suitable way.

Improved Packages of Powder Charges for Blasting.

Henry M. Boies, Scranton, Pa.—This invention consists in packing the powder, in convenient quantities, in long tubes of paper or any fabric or material of sufficient strength, rendered waterproof if necessary, of a proper shape and size to be used as a cartridge, and of such a length in excess of the powder inside as shall allow of its being folded into a compact form, and divided for use into cartridges of any desired length or weight. Each cartridge tube or package may be easily marked with th size, and quantity, and brand of its contents; and when it comes to the consumer, he can measure off from either end the quantity desired for a blast slide the powder away from this point, divide the tube, fold back the ends and the cartridge is ready for use, proceeding in the same way until the whole package has been used. Thus the danger of preparing the cartridge over the open keg and the liability to damage of the exposed powder are avoided, and the time and labor of making the cartridge, as well as the materials of which it is composed, are saved.

Improved Mold for Fancy Buttons.

Frederick Maass, Newark, N. J.—This invention has for its object to furnish an improved fancy button, the mold of which shall be so formed that the cover may be put on, held in place, and ornamented with cord or thread without sewing. The invention consists in the grooves formed in the outer surface of the molds, and in cords or threads in combination with the grooves of the molds, for securing the cover in place upon said molds.

Improved Drill for Well Boring.

Timothy Phillips and Joseph Golletz, Leavenworth, Kansas.—The drill is made tubular and somewhat flaring, so as to cut a hole a little larger than its body. The lower edge is serrated so as to cut a ring groove into the stratum through which it is boring, the core or central part of the cut passing up through the cavity of the drill. The upper end is rabbeted, and on it is screwed the lower end of a tube, in the sides of which are formed a number of holes to allow the water to flow out, and thus lessen the weight. In the upper end of the tube is screwed a section of pipe, and other sections may be added as the hole increases in depth. To the upper end of the drill is hinged a valve, opening upward into the tube, so as, when the drill is raised, to carry the contents of the tube and pipe with it. With this drill, it is stated, a hole may be sunk by hand to the depth of two hundred feet, and with a lever to any desired depth. This drill also enables the operator to know exactly the kind and depth of stratums through which a hole is being sunk.

Improved End Gate for Wagons.

Joseph C. Baird and Merritt Miller, Heaton, Ill.—This invention is an improvement in devices for securing end boards or gates of wagon boxes and consists, chiefly, in a lever pivoted to the gate by a link or bar, and having, at one end, claws or hooks for taking into notches in one of the side boards, and at the other end a slot to receive a staple which projects from the gate.

Improved Soap Cutting Machine.

Joseph Seibert, New York city.—The object of this invention is to furnish to soap factories and dealers in soap an improved machine for cutting the soap blocks into pieces of any required size. The invention consists of a feeding frame provided with adjustable block carriers for forcing the soap against a suitable cutting frame, on which the cutting wires are rigidly applied by a stretching device, which consists of a supporting piece which carries a crank shaft. The wire is wound upon the shaft by turning it with a small crank, and retained in stretched position by a ratchet and pawl.

Improved Churn Dasher.

George Ridler, Rickardsville, Iowa.—This invention consists in an improved form of churn dasher formed of bars crossing each other, which are made V-shaped with V grooves in their under side. It was fully illustrated and described on page 338 of the current volume of this journal.

Inventions Patented in England by Americans.

[Compiled from the Commissioners of Patents' Journal.]

From November 8 to November 13, 1873, inclusive.

CONDENSING MILK, ETC.—G. Borden, White Plains, N. Y., *et al.*
GAME.—G. S. Lee (of Worcester, Mass.), London, England.
GAS.—G. W. Morris *et al.*, Baltimore, Md.
LOOM.—E. Oldfield, Norwich, Conn.
PAPER BAG MACHINE.—L. C. Crowell, Boston, Mass.
PRESERVING MILK, ETC.—G. Borden, White Plains, N. Y., *et al.*
RAILROAD BRAKE.—W. M. Henderson, Philadelphia, Pa.
SPADE BAYONET, ETC.—F. Chillingworth, Springfield, Mass.

NEW BOOKS AND PUBLICATIONS.

ORIGIN AND METAMORPHOSES OF INSECTS. By Sir John Lubbock, M.P., F.R.S., Vice Chancellor of the University of London. With numerous illustrations. Price $1.25 London and New York: Macmillan & Co.

The author of this book is the head of a large London banking firm, an chairman of the Committee of the Bankers' Clearing House, besides f filling the duties of the positions mentioned in the title; and he yet fin time to pursue, to its uttermost details, one of the most complicated an voluminous branches of natural history. His numerous contributions to the literature of entomology have been read before the Royal Society, the British Association, the Ray Society, and many other learned bodies. This treatise, now issued in an elegant form, with numerous engravings, was originally published in the pages of *Nature*.

HOW TO MAKE MONEY BY PATENTS. By Charles Barlow Third Edition. London: E. Marlborough & Co, 14 Warwick Lane.

It is not necessary to give a detailed description of this excellent little treatise, as we published a resumé of its contents on page 366 of our volume XXVII. The demand for two further editions is an indication of its continued utility.

NOTES OF A METALLURGICAL JOURNEY IN EUROPE. By John A. Church, Engineer of Mines. With Illustrations. New York: D. Van Nostrand, 23 Murray and 27 Warren Streets.

The author here reviews the systems in use in Germany and Italy, especially in the Hartz, at Freiberg, and at Agordo. The notes were first published in the *Engineering and Mining Journal*.

MATHEMATICAL AND PHILOSOPHICAL MANIFESTO, concerning a Lacking Link in the Demonstration of the Pythagorean Problem, Disproving its Absolute Truth, etc. By Theodore Faber. New York: E. S. Dodge & Co., 84 John Street.

We have carefully looked through this pamphlet for the disproof of the Pythagorean argument, and we must admit that this also is still a "lacking link." But as the matter is in the hands of the Royal Society of England, we will await the discussion of the subject by that learned body before venturing a final opinion.