IMPROVED FISHING ROD REEL.

Charles L. Noe, Bergen Point, N. J.—This consists of a brake for stopping the overrun of the line after the lead has fallen into the water. It is composed of a plate fixed on a joint, soas to be borne on the spool by a spring, and having a thumb lever, by which to hold it off until the moment the lead strikes.

IMPROVED PROCESS OF RESTORING CRAPE, LACES, ETC.

Aaron Joseph Shriver, Baltimore, Md.—This invention relates to a novel process of cleaning and restoring rumpled and faded crape, lace, and othersimilar thin material. It consists in immersing the fabric in a specially prepared solution consisting of alcohol, a suitable dye stuff, and shellac, and afterwards subjecting the material to the action of steam, which brings out the color of the dye and crimps the fiber, the shellac serving to hold the fiber in its crimped form, so as to present the original texture of the fabric when new.

IMPROVED COMBINED STEREOSCOPE AND GRAPHOSCOPE.

James Lee, New Brighton, N. Y —When the lens holder is raised into an erect position it is caught and held by a spring catch, and is thus not liable to fall back and mar the instrument or break the lenses. Wings or side shields are employed to keep the light from the eyes when using the instrument. Said wings may be closed against the lens holder.

IMPROVED TUG BUCKLE.

Herbert C. Ward, Willmar, Minn.—When the draft strain comes upon the buckle the bail slips forward, and the tug is clamped between a cross bar of the bail and a front cross bar of the buckle frame, thus relieving the tongue from the most of the draft strain. The principal use of the tongue is to prevent the tug from slipping when the draft strain is being applied, and to prevent the said tug from working loose.

METHOD OF UTILIZING THE LEATHER OF CARD CLOTHING.

Frank E. Brummit, Walpole, Mass.—This inventor takes the old card clothing as it now comes from the mills and is thrown away, removes the teeth, and gums the leather with gum tragacanth. He then resets the leather with new teeth, pricking the holes in the opposite way to the first setting, so that they will not go in the same holes which they would be liable to do if set in the same direction. The gum fills the old holes, and in some measure restores the leather to the original condition for receiving and holding the teeth.

ANKLE SUPPORTS FOR SKATES AND IMPROVED SKATES.

Julius Drucklieb, Jersey City Hights, N. J.—The first invention consists of an outwardly curved supporting rod that is applied to a socket pivoted to the side of the runner. The supporting rod makes it easier to beginners to learn to skate, while it gives to the accomplished skater a support for the lower muscles, so that he can hold out longer and practice with less fatigue. The second invention relates to such improvements in skates that the same may be instantly and rigidly applied to the heel and sole of the shoe. A set screw allows the adjustment of the skate to any size of heel, while a swinging lever produces, by being carried up until retained by a stop lug, on the runner, the tight attachment of the skate to the boot heel, releasing the same when the lever is lowered and the griping of its sharp edge is discontinued. The front part of the boot or shoe is connected to the skate byan adjustable toe holder.

IMPROVED CARTRIDGE.

Albert Hall, New York city.—This relates to improvements in the construction of paper cartridge shells, by which the same are considerably stiffened, and the anvil rigidly and strongly secured in position in the shell. The invention consists of a diametrical anvil, made in one piece with an encircling socket tube, retained securely by a paper shell and metallic cap piece.

IMPROVED SHOE FASTENING.

William J. Vitt, New York city.—The flap is fastened to the upper by a number of tubular clips applied to the shoe. The clips of the flap and upper are arranged to alternate with each other, and connected by a string that is secured by a knot to the lowermost clip. The string is then passed through all the clips, the upper end giving readily for the opening of the flap in putting on or taking off the shoe. The end of the string is applied to and rigidly retained by a suitable clamping device, and then passed through a hole or eyelet of the upper to the inside to be wound around the ankle.

NEW HOUSEHOLD INVENTIONS.

IMPROVED SASH FASTENER.

Thomas Hill, Portland, Me.—The invention relates to a fastener so constructed and applied as to lock the upper and lower sash together in any adjustment. The fastener consists of a notched and slotted plate, secured to the side bar of the upper sash, and a button or catch pivoted to the top of the lower sash, the arrangement being such that the catch works in the slot of the plate, and engages the notches thereof to hold the sash at the desired hight.

IMPROVED WASHING MACHINE.

Franzis M. Hellstrom, Lawrence, Kan.—The rubbing surface of the suds box is formed by attaching half-round strips of wood at their ends to strips of zinc. The movable rubber is formed by attaching half-round strips of wood to the curved edges of segmental disks. When the levers are arranged in a vertical position their ends rest against cleats attached to disks of the movable rubber, against which they are locked by catches, so that the rubber will be operated by operating the levers.

IMPROVED KNIFE-SCOURING MACHINES.

Herbert Symonds, Troy, N. Y.—In this device the polishing powder is fed downward to the polishing pads from the reservoir. There is also a new mechanical construction of the pads.

IMPROVED BOLT.

Francis Robinson and John H. Ferris, Trenton, N. J.—This consists of a bolt that slides and turns in a barrel by means of an inclined elliptical collar of the bolt bearing on the correspondingly beveled end of the barrel. The bolt is retained in locked position by a shoulder or seat of the handle.

IMPROVED CARPET STRETCHER.

Joseph S. Ingham, Knoxville, Pa.—This is an ingenious combination of lever and pulley for drawing the edges of carpets out taut.

IMPROVED DOOR BELL.

James M. Hinchey, Philadelphia, Pa.—This consists of a bell mechanism operated by a swinging lever that winds up a spring and rings the bell on a release of the pull, by the action of the spring and transmitting gear wheels.

IMPROVED HEATING ATTACHMENT FOR STOVES.

Lars M. Madson, Daneville, Dak. Ter.—This is an improved heating attachment to cooking and heating stoves, by which the heat of the fire gases is more completely utilized before escaping into the chimney. It consists of a sectional pipe, made of jointed elbows at suitable inclination, and supported on the stove and on an adjustable brace standard.

NEW MECHANICAL AND ENGINEERING INVENTIONS.

IMPROVED PROJECTILE.

James M. Pollard, New Orleans, La.—This invention consists in a projectile having a central cylindrical portion, with ends symmetrically tapered to a conical or paraboloidal form, the rear end of the projectile being upset or molded with a raised circumferential bur, which is of less diameter than the cylindrical portion, and has a convex end. The double paraboloidal form adapts the projectile to the least resistance from the air, while the raise bur acts in the nature of a guide, as a feather to an arrow.

IMPROVED FEATHERING PADDLE WHEELS.

John H. Clow, Orange, Wis.—Certain improvements are made in that class of paddle wheels designed for the propulsion of boats in which the paddles are pivoted upon one side of the center so as to feather or move edgewise in rising from the water so as not to carry dead water. The invention consists mainly in the particular construction of a locking bolt, arranged to be operated by a lever and cam, and located in the central part of the wheel so as to engage with the middle part of the paddle, and lock or release the same at the proper time.

IMPROVED PORTABLE DERRICK.

Shirwood Y. Reams, Belleville, Texas.—This consists of an adjustable crane mounted on a truck platform, having an overhead frame for the support of the upper end of the crane post, and braces for staying the frame. The crane can thus be turned around to overhang the sides. The whole is a simple apparatus, which may be moved readily from place to place by hand or by horse power.

IMPROVED WINDMILL.

James Ward, Winnemucca, Nev.—This consists of an upright wheel with spirally curved floats, in connection with a corresponding number of fixed and hinged and weighted shutters, of which the latter are regulated by weights and a connecting governing string.

IMPROVED AUGER HANDLE.

James Magers, Gervais, Oregon.—By suitable construction, a locking plate prevents the bit from turning in the handle when the auger is in use, and at the same time allows the bit to be readily detached and attached when desired.

IMPROVED SAW SET.

Henry Itskin and John Gregg, Rockfield, Ind.—This is a set to be used with the hammer. It has a wedge-shaped notch in the end, and a gage to regulate the position from the side of the saw, so that by placing the notch on the point of the tooth, and hammering the end of the tool, the same as an upsetting gage, the tooth will be set by bending it laterally. There is also an upsetting notch in the tool to adapt it for both kinds of teeth.

IMPROVED NUT LOCK.

Samuel Henry, Chenoa, Ill.—This improved nut lock is formed of a curved plate, having its ends curved upward, and having notches with inclined sides and straight bottom formed in said ends, to adapt it to be applied to the nuts of a pair of bolts.

IMPROVED TIRE UPSETTER.

Ebenezer B. Rose, Goshen, assignor to himself and George M. Bull, New Baltimore, N. Y.—The tire or other iron to be shrunk is heated, placed upon plates, and clamped against toothed blocks by eccentrics. Then one plate and its toothed block and eccentric are forced forward, shrinking the iron.

IMPROVED MACHINE FOR MAKING WEDGES.

John Lennerton, Truro, N. S.—The first part of this invention consists of two revolving cylinders fixed upon a shaft furnished with four cutters in each cylinder, so arranged as to cut the wedges to the required thickness and taper. The second part consists of two other revolving cylinders, similar to the first pair, so arranged upon the same shaft as to cut the wedge to the required width. The third part consists of a circular saw and movable table top, so combined and arranged as to cut the wedge to the required length, and working in conjunction with the other parts.

IMPROVED TIMING ATTACHMENT FOR WATCHES.

Thaddeus Ackley, Warren, Ohio.—A spiral spring is arranged between a top plate and a grooved disk, and serves to throw the disk into contact with the spurred catch at the instant when the lever releases the disk-lifting spring. The spurred catch engages the grooved disk at any position, so as to instantly turn the same with the arbor, and move thereby the second wheel. By pulling out the controlling lever the disk is detached from the spurred catch, and thereby the second hand stopped, the lever being pushed in at the moment when the timing is to begin, so that the second hand moves until, by pulling out the lever, it is stopped again, so that the time taken up by the race is indicated in reliable and convenient manner.

IMPROVED MECHANICAL MOVEMENT.

Miner G. Mosher, Wichita, Kas.—This is an improved device for converting a reciprocating into a rotary motion which has no dead points. It mainly consists in the combination of a U fork, provided with two pairs of hook pawls, with the wheel provided with the bolts; and in the combination of the three three-armed or T bars and their connecting rods or chains with the U bar or fork and with the two sets of hook pawls.

IMPROVED STEERING PROPELLER.

Flavius J. Ashburn, West Union, W. Va.—This consists of propeller blades arranged horizontally on and hinged to vertical crank shafts suspended from a horizontally revolving frame above the water, and connected by their cranks to the crank of a shaft in the center of the carrying frame, and around which they swing. All the paddles thus face in the same direction, so that in the forward motion they turn upon a hinge and work edgewise, and in the back motion they work broadside against the water to propel the boat. This invention also consists of a stationary crank around which the bucket swings, made to be turned in either way, and provided with means for turning it, which may work either by the engine or by the pilot wheel, whereby the direction in which the paddles act is changed at will to reverse the motion of the boat, and to utilize the propeller for steering it.

IMPROVED METHOD OF ANNEALING PLOW MOLD BOARDS.

Eli H. Babcock and John C. Whiting, Canandaigua, N. Y.—The object of this invention is to enable chilled mold boards and other chilled castings to be cooled without warping or being strained, and thus keep them in exactly the required shape. It consists in removing the castings from the chills as soon as they are cool enough to be handled, placing them in hot forms, and cooling them under pressure, and under a gradually diminishing heat.

IMROVED CAR TRUCK SHIFTING APPARATUS.

Robert H. Ramsey, Cobourg, Canada.—This invention consists of a couple of trucks on each side of the track on which is the car whose trucks are to be shifted, carrying a beam extending across from one to the other under the car body at each end. There is a depressed portion of the main track, down which the trucks to be removed run, and detach from the car, while the latter runs on the beam carried by the side trucks, which run at the same time on level tracks. The trucks to be connected are run up the grade, and thus brought into connection with the car.

IMPROVED KEY-HOLE GUARD.

John La Blanc and Xavier St. Pierre, San Francisco, Cal.—This consists of a sliding guard plate operated by a crank pin, sliding in a segmental recess of the face plate of the lock, and in a slot of the guard plate.

IMPROVED AUTOMATIC CAR BRAKE.

Ira Robbins, Hughesville, Pa.—This invention relates to an improved construction of car brake, designed to apply or remove the brakes automatically, or by hand, as may be desired. It consists chiefly in the arrangement of a bellows operated continuously by the car wheels, which is employed for releasing the brakes by acting upon a tripping rod when the cars stop; in the mechanism operating in connection with said bellows; and in devices for automatically applying the brakes by the impact or concussion of the cars.

IMPROVED CAR COUPLING.

Nicholas Darrow, Hempstead, Texas.—The cars are arranged with spring buffers, of which the buffers of one car have side-extending guard plates, to which the tapering heads of the buffers of the adjoining car are fitted. The guard plates guide and assist in the coupling of the cars, and also prevent the cars from swinging too much from one side of the track to the other.

IMPROVED NUT LOCK.

Isaac Van Kuran, Omaha, Neb.—This consists of a washer of steel over a cavity in the fish plate, and surrounding the bolt, so that the pressure on the bolt on the fish plate is transmitted to the surface of the plate surrounding the cavity by the washer. This allows of any required amount of pressure, and at the same time affords a spring with sufficient reactionary power against the nut at all times to prevent it from becoming slack, so as to work off or unscrew.

IMPROVED CAR COUPLING.

Jacob F. Rochm, Hiawatha, Kan.—When the drawheads approach for coupling, the spring-supported links enter the mouth of the corresponding cavities at opposite sides of the drawheads, strike against the pins, so as to throw them back and push them in upward direction on the guides, to allow the passage of the links. When the links have entered beyond the pins, lever handles are thrown forward, and the pins dropped by the concussion of the drawheads, so as to couple the links.

IMPROVED METALLIC GIRDER.

John L. Nostrand, Brooklyn, E. D., N. Y.—In the neck of the head or flange is formed a longitudinal groove or channel, to receive the edge of the web, where it is secured in place by bolts or rivets. By this construction, beams of a greater strength can be made by using the same quantity of iron, or of an equal strength, by using a less quantity of iron, and also, the strain is transferred from the rivets to the shoulders of the heads, against which the edges of the web rest.

IMPROVED WATCHMEN'S TIME DETECTER.

Jacob H. Massey, Allentown, Pa.—This is a watchman's time detecter, which is applicable to a building for inside and outside use. It consists of a dial with concentric circles, revolved by a clock train, and operated by a suitable spring-marking device, in connection with a pull from the inside or outside of the building. The marking device is set for each day by a crank shaft engaging a rack of the marker.

IMPROVED LEATHER-STRETCHING MACHINE.

William Coupe, South Attleborough, Mass.—This is an improved machine for stretching leather for belts and other uses, so constructed as to stretch the leather evenly when varying in thickness, and which may be readily adjusted to stretch the leather to any desired extent.

IMPROVED VIBRATING PROPELLER.

John Forgic, Sr., and John B. Forgic, Jr., Hicksville, N. Y.—This invention consists of carrying paddles in the form of the slats of a window blind, and working alternately sidewise and edgewise to the water as the frames swing backward and forward. The said frames are pivoted at the upper end, in such manner that the lower end works parallel with the engine rod, to which it is connected, to be worked by the steam power applied directly to the rod.

IMPROVED DOUBLE-ACTING FORCE PUMP.

George W. Hooper, Greene, Me.—In using the pump, as the piston moves downward, a vacuum is formed above it, and the water is forced, by atmospheric pressure, through passages and a valve, and passes into the upper part of the cylinder. At the same time the water in the lower part of the cylinder is forced out, opening another valve, and passes into the pump tube and out through it. As the piston moves upward, the water passes in through other openings and valves, and passes into the lower part of the cylinder. At the same time, the water above the piston is forced into the pump tube.

IMPROVED VALVE GEAR.

John E. Giles, Hazleton, Pa.—The crank pin which works the valve is carried in a block in a slotted disk which slides along the disk for shifting the valves, and to the opposite side of the axis for reversing, and is worked by a sleeve on the shaft of the disk to which the shafting lever is connected. The disk is geared by a toothed rim with a wheel on the crank shaft (which gears are eccentric), by which the irregularities of the crank are overcome. For a lap valve, the slot in the disk for carrying the crank pin is arranged out of the center of the line of the axis of the disk to just the measurement of the lap and lead of one end of the valve.

IMPROVED BARREL FOR WATCH SPRINGS.

Sherman D. Johnson, East Haddam, Conn.—This invention consists of the combination of the mainspring barrel by suitable pawls with a separate toothed wheel around the barrel, that is capable of motion independent of the rim on the breaking of the spring.

IMPROVED CAR BRAKE.

Jacob Blanshan, Le Fever Falls, N. Y.—This relates to brakes on opposite sides of wheels, the object being to relieve the axles of the lateral pressure to which they are subject when the brakes apply to one side only.

IMPROVED SHARPENING MACHINE.

George W. Ingersoll and Harvey L. Fisher, Toledo, Iowa.—This is a new tool-holding device, whereby any cutting tool may be sharpened at an exact bevel without help, as one hand can turn the stone and the other guide the tool against the same. By rolling a gage rod, gouges may be ground with the same bevel in superior manner. It is readily adapted to any size of grinding stone.

IMPROVED FURNACE FOR BURNING SAWDUST, TAN BARK, ETC

Frederic T. Kidder, Claremont, N. H.—This invention consists in using feeders under or in the bottom of the mass of the fine fuel, with which the stove is filled. The said feeders are pieces of wood extending from the front at the draft inlet along the stove to the back, and which, being ignited at the front end, burn slowly, together with the sawdust or tan bark immediately around them, while the heat, ascending up the bank of other fuel, converts it into charcoal, and prepares it for burning as it falls down to the fire. In case the fine material is very wet, perforated pipes are placed horizontally in the same, a little above the wood pieces, to conduct some of the heat into the mass, for drying it in advance of the fire, by passing from the tubes up through the fuel.