

**IMPROVED BRIDLE ATTACHMENT.**

Seton S. Cummings, Turner's Point, Tex., assignor of one third his right to Walker C. Stevenson, of same place.—This bridle is intended for training and taming horses; and it consists in the combination of brace and guide reins, neck and crupper straps, surcingle, and collar. A brace rein buckles into the bit rings, and runs through a ring attached to a strap that is secured to the neck strap, and thence it runs through a loop that is attached to the collar strap, and is finally secured to a ring that is attached to the surcingle by means of loops. The martingale is buckled into the bit rings, and passes through a loop in the front and lower part of the collar strap, and is fastened to the lower portion of the surcingle. All of the straps are duplicated, both sides being exactly alike; and they are provided with buckles or other convenient means for lengthening and shortening, to meet the requirements for horses of different sizes, and for the purpose of adjustment for different positions of the same animal.

**IMPROVED CORSET.**

Mrs. Maggie M. Harriman, Kansas City, Mo.—This improvement relates to the form and manner of cutting the first gores, to the shape of the sides of the body or waist of the corset, and to the conjunction of short bones with a quilted portion on the back of the corset, whereby it is rendered more elastic, easy, and durable in wear, and adapted for use as a dress waist.

**IMPROVED APPARATUS FOR PICKLING SHEET IRON.**

John D. Grey, Baltimore, Md.—The ordinary or old process of removing the oxide from sheet iron is to lay the sheets in a tank containing dilute sulphuric acid. They are placed vertical, or nearly so, with their sides in contact. By this improved apparatus, the sheets are conveyed slowly through the tank, upon endless chains, thus saving much labor in handling, lessening the time required for pickling, and enabling the acid to act upon the sheets more uniformly.

**NEW MECHANICAL AND ENGINEERING INVENTIONS.****IMPROVED SAW-FILING MACHINE.**

Samuel V. Pattillo, Greenville, Ala., assignor to himself and Frank J. Kohn, of same place.—This is an improved filing machine by which the gin saws may be quickly, uniformly, and effectively sharpened. The machine is operated by adjusting, first, the file vertically to one saw after the other by means of the center screw post and hand wheel, and filing the teeth of each saw at one side. The saw cylinder is next taken out of the centers and reversed, and the machine adjusted for left hand filing when the same operation of sharpening the teeth of each saw is performed as before, and thus a rapidly working and very effective filing machine for gin saws is obtained that accomplishes the work in better, speedier, and more uniform manner than by hand.

**IMPROVED DYNAMO-ELECTRIC MACHINE.**

Dieudonné F. J. Lontin, Paris, France.—This invention consists, first, in combining a magneto-electric machine, in which the induced magnets are stationary and the inducing magnets movable, with a dynamo-electric device for producing currents invariable in direction, for the purpose of exciting the aforesaid magneto-electric machine; and, secondly, in increasing the length of cores of the stationary inducing electro-magnets of the device employed for producing currents invariable in direction, so as to permit one or more wires to be placed thereon, from which alternate currents in opposite directions may be taken, by which arrangement currents invariable in direction are obtained from the induced magnets of the wheel, and also alternate currents in opposite directions from the additional coils upon the lengthened inducing magnets, without the use of collectors or commutators.

**IMPROVED WRENCH.**

James Shepard, Angola, Ind.—This wrench is easily and quickly operated, as the turning of the handle moves both jaws, the same admitting to be opened wider, to be applicable to larger burs, while the length and leverage is increased jointly therewith. It has a handle with exterior and interior screw threads, that move jointly the jaws having intermeshing threads, the outer jaw being guided in an oblong recess of the inner jaw.

**IMPROVED WINDMILL.**

William T. Burrows, Nashua, Iowa.—The shaft of this wind wheel is so pivoted to the head of the tail vane that, in turning out of the wind under the influence of great force, the wheel will swing up an incline, whereby its own tendency to swing back down the incline is the means of keeping the wheel in the wind; and, in combination with a wheel in this arrangement, it is proposed to arrange a vertical vane behind the wheel on a pivoted bar, and connected to the vibrating wheel frame, to pull the wheel up the incline, in order that it will swing out of the wind more easily, and the lever of this vane will be weighted to regulate its action, to accommodate the wheel in so swinging out of the wind.

**IMPROVED ORE FEEDER FOR QUARTZ MILLS.**

George A. Church, Nevada City, Cal., assignor to himself and Edward L. Montgomery, of same place.—This is an improved device for feeding ore to the mortars in quartz mills, so constructed as to feed the ore to the mortar only as it is wanted, which will feed dry and wet ore with equal facility, which will not allow soft running stuff to run through and fill the mortar, and which will not impair the effect of the blow of the stamp by which it is operated.

**IMPROVED RELIEF AND SAFETY STOP VALVE.**

Charles P. Wiggins, St. Louis, Mo.—The object of this invention is to prevent accidents from carelessly closing the feed pipe while the pump is in motion, and it is so constructed as to always leave an open discharge. It consists in a relief or safety stop valve, formed of the shell provided with an inlet, two outlets, and two valve seats, and the double valve, so arranged that it can close only one outlet at a time, to adapt it to be interposed between the boiler and the check valve of the pump discharge pipe.

**IMPROVED HOISTING MACHINE.**

Daniel H. Merritt, Marquette, Mich.—This is an improved hoisting machine of considerable power, operated by a friction gearing at varying motion, and capable of being stopped at any moment, to support the load to be hoisted, by a superior brake arrangement; and it consists of a hoisting drum which is operated with friction wheels, and whose shaft is adjusted in parallel manner by eccentric sleeves with slotted arms, connecting rods, and a worm and toothed segment gear. The brake is applied by a similar gear to the other end of the drum, capable of adjustment to wear, being taken off by a brake shoe and supporting arm at the lower end.

**IMPROVED CAR COUPLING.**

Benning Rowell, West Sparta, N. Y.—This invention is an improvement in the class of car couplings which are automatic in their operation. The improvement relates particularly to a device which acts as a trigger to support the coupling pin in position to engage the link when it enters the drawhead, and also serves to hold the link horizontal, or at any required angle in a vertical or horizontal plane, so that it will enter the drawhead of another car; also to a pawl lever whose function is to operate the coupling pin of the drawhead and to lock or hold the same in position when it has engaged the link.

**IMPROVED TREADLE.**

William B. Floyd, Kansas City, Mo.—This invention relates to an improvement in that class of sewing machines and other treadles that are worked by the alternating raising and lowering of the feet and legs in place of the forward or backward motion of the feet, so as to remove all strain from the ankles, and give the operator more power with less exer-

tion than with the common treadle. It consists of two treadles, that are arranged in adjustable manner on the laterally swinging treadle bar, that turns by its crosspiece in suitable bearings. The treadles are pivoted longitudinally and laterally, to adapt themselves to the position of the feet. The compound pivots of the treadles renders the motion of the same natural and easy, so as not to fatigue the worker as much as where the feet and ankles alone do the work. The feet do not change their relative positions to the legs by the adjustment of the treadles to their position, so that there is no strain upon the ankle joints, but only upon the knee and thigh joints, which can perform more labor with greater ease, on account of their greater strength.

**NEW WOODWORKING AND HOUSE AND CARRIAGE BUILDING INVENTIONS.****IMPROVED AUTOMATIC WAGON BRAKE.**

Charles T. Warren, Atlanta, Ga.—This improved brake for vehicles is so constructed that it will be applied to the wheels by the operation of holding back, and at the same time will allow the vehicle to be backed without its being thrown into action. The construction is simple and ingenious, rendering the device excellently adapted to its purpose.

**IMPROVED DUMPING WAGON.**

Robert A. Reed, Hoboken, N. J.—This is an improved device for attachment to trucks, cars, wagons, carts, and other vehicles, to enable their loads to be readily dumped. By the construction, by turning the shaft in one direction the forward end of the body or box will be raised to dump the load; and by turning it in the other direction, the body or box will be drawn back into a horizontal position.

**IMPROVED MITERING MACHINE.**

Josiah H. Mosher and John Pennington, Pewamo, Mich.—This improved mitering machine is for use in the manufacture of picture frames, moulded frames, and for the cutting and putting together of frames on any desired angle and length. It consists of a basepiece with graduated guide rails, carrying sliding frame supports with adjustable saw guides secured thereto. The mouldings are first cut at the required miter, and then brought to a perfect joint by running the saw through the joint of the mouldings while they are firmly clamped together. They are then fastened by glue and nails, and thereby two corners of the frame connected in an easy, quick, and effective manner. The mitering and jointing of frames and mouldings is thus accomplished by a simple, accurate, and readily operated device.

**IMPROVED SINK.**

Benjamin Wallace, New York city.—This is an improvement on the sinks used in kitchens, tenement houses, etc., by which the rotting of the surrounding woodwork by the running or splashing over of the water is prevented, a more effective and readily changed strainer is obtained, and a tight joint between sink spout and conducting pipe, to avoid leakage, is formed. It consists of a sink with side and back guards extended above the horizontal flanges or seats.

**IMPROVED CAR SCREEN.**

William De Courcy May, Baltimore, Md.—This screen is shaped and folds like a lady's fan. It is attached to the side wall of the car, and may be extended and held open in a vertical plane, at right angles to said wall to prevent air currents from the open windows striking directly upon the passengers occupying the contiguous seats. The fan may be locked, by a catch, in the open or closed position, and constitutes a desirable as well as ornamental appendage of the car.

**IMPROVED THILL COUPLING.**

Benjamin P. Morrison, Abingdon, Va.—This thill coupling retains the shafts in strong and safe manner on the axle without a detachable bolt, avoids rattling, and allows the ready taking off and replacing of the shafts or poles when the vehicle is placed in the carriage house. It consists of a hook-shaped shaft head, that is locked to a cross bolt, with central flat eccentric part swinging in the ears of the axle clip and entering the recess of its shaft head. The hook-shaped end of the shaft head is first introduced into the ears of the clip while the front end of shaft is resting on the ground, and the flange of cross bolt hanging down. The shaft is then raised as nearly as possible to the perpendicular, so that the shaft head may pass down between ears far enough for the flange of bolt to be swung into the opening or recess in shaft head. The shaft is then lifted in upward direction until the bottom or rear part of recess is brought in contact with flange of bolt, when the shaft may be swung down to the ground. A thin strip of leather is interposed between the flange of bolt and shaft head to form a tight fitting of the parts, and prevent rattling. The shaft cannot become detached when in use, has no nuts to work off or bolts to be taken off in attaching and detaching, and forms a simple and effective device for quickly taking off and applying the shafts or poles.

**IMPROVED COMBINED FREIGHT AND STOCK CAR.**

Jones R. Maitland, Hot Springs, Ark.—This consists of a freight car, with jointly-sliding upper and lower sections, that either close or open the upper and lower openings of the car. The upper sections are guided by friction rollers on strips, and are moved in division casings with inclined bottom rails, having suitable openings for the shedding of the entering rain. When stock is transported, the sections are thrown open and locked by spring bolts. When freight is to be shipped, the sections are closed in similar manner, providing thus a stock or freight car, as required by the service of the road.

**IMPROVED CENTER-DRAFT SIDE THILL.**

Conrad H. Matthiessen, Odell, Ill.—The object of this invention is to construct wagons provided with side thills in such a way that there may be no side draft; and it consists in the combination of a lever, wire rope, keeper, pulley, wire rope or rod, and spring, with a side thill, whiffletree, and running gear of a wagon. The effect of the arrangement is to take the draft from the rear axle, the pole being merely used for holdback and steering purposes. The vehicle is thus made to run more steady, with better guidance, and less side draft.

**NEW AGRICULTURAL INVENTIONS.****IMPROVED CORN PLANTER.**

George Tatlock and Stanford Newby, New Philadelphia, Ind.—This is an improved machine for planting corn, which opens a furrow to receive the seed, drops the seed at regular distances apart, and covers it, and is so constructed that the planting device can be detached and the rest of the machine used as a plow or cultivator, by detaching the side bars, the wheel dropping cylinder, and the hopper, and bolting the forward ends of the handles to the plow beam. The seed is received from a dropping cylinder and conducted to the ground by a spout, which passes down through holes in the beam and standard.

**IMPROVED ANIMAL POKE.**

Benjamin D. Watson, Durant, Miss., assignor to himself and James C. Watson, of same place.—The object of this invention is to provide a yoke that shall prevent animals from jumping over or destroying fences. A saddle is concaved to fit the under side of the body of the horse, and secured in place by a strap that passes over the horse's back. A mortise is made in the saddle to receive an arm which is provided with a slot. A pin passes through the saddle and through the slot. The arm is provided with a point and a perforated spring, the latter acting as a guard for the said point. Another arm is jointed to the arm already mentioned, and is capable of being raised into a horizontal position, but is prevented from rising further by the shoulders of the joint. The former arm is placed between the front

legs of the horse, and the latter is connected with a headstall by a strap. When the horse attempts to jump, the raising of the head or striking the second arm into the fence or other object presses the point through the aperture of the spring into the chest of the horse.

**IMPROVED SEED PLANTER.**

Harvey J. Robinson, Carpinteria, Cal.—This is an improved machine for planting potatoes, corn, and other seeds, so constructed as to plant the seed so deep as to be beneath the dry soil so that it may have sufficient moisture to make it grow, which will prevent the moist and dry soil from becoming mixed, and which will cut off any weeds that may be growing upon the land being or to be planted.

**IMPROVED HORSE HAY FORK.**

Peter Grant, Clinton, Ontario, assignor to himself and John R. Grant, Brussels, Canada.—This fork is to be used for loading and unloading hay and other similar substances by means of horse power. It consists of a central tubular tine and lateral tines. A tubular plunger fits into the central tine, and is provided at its upper end with an eye or hook, and is plugged at its lower end, and provided with ears, between which bars are pivoted. A spring is clamped to the tine by a band and screw, and is provided with a catch pin, which passes through a disengaging lever and side of the central tine into a hole in the plunger. The lever rests under the spring, and is held in place by the catch pin. The free end of this lever is bent upward, and provided with a small pulley. A key passes through a mortise in the central tine and through a slot in the plunger, for limiting the motion of the said plunger. The end of the key is bent over the front of the central tine, and is formed into an eye for attaching the disengaging cord which runs over the pulley.

**IMPROVED PLOW.**

John Preston, Millford, Ky.—This plow is intended to be used for laying off or marking land, and for making hills for tobacco, cabbages, and other kinds of plants to be transplanted, for covering corn, and as a shovel plow. It consists in the combination of a curved beam, provided with a plow plate and a rigid perforated bar, a slotted beam, a standard, provided with the square plow and the roller, and handles. In using the plow for preparing the ground for transplanting plants, the shovel plow opens a furrow, along which the square plow follows, pushing the loose soil before it. At the point where each plant is to be set out the plow handles are raised, which causes the square plow to leave and pass over the soil collected before it. As the square plow is again dropped to the ground, the roller presses upon the little heap of soil left by the square plow and flattens and smooths it, ready to receive the plants. For covering seed, the beam is detached, the square plow is drawn along the furrow, and is raised by the handles at each hill. To adjust the machine for use as a shovel plow, the beam and the square plow are detached, and the shovel plow plate is attached to the standard.

**IMPROVED CLEARING ATTACHMENT FOR PLOWS.**

Jonathan F. Dock, Elkhart, Ind.—This invention consists of a frame bolted to the plow beam, and carrying a serrated roller, that revolves on a vertical axis above the upper edge of the plowshare, and a jointed hook, that projects diagonally from the said frame, for drawing stubble, weeds, etc., into the furrow as it is turned. The frame is secured to the plow beam by a bolt that passes through a slotted arm projecting from the frame. The advancing end of the lower portion of the frame is pointed, so that it may readily pass through stubble and weeds. The roller is grooved spirally in opposite directions, forming diamond-shaped projections, which engage with the surface of the earth as it is turned up by the plowshare, and insure its rotation. This roller assists in turning the furrow, and also rolls the weeds under. The hook is drawn along upon the surface of the ground, and draws in the stubble and weeds as the furrow is turned. The spring permits it to follow the inequalities of the ground.

**IMPROVED SCYTHE SNATH FASTENING.**

Miles Smith, Springfield, Vt.—This invention is an improvement upon the patent granted the same inventor January 16, 1877, for a similar invention, in which the tang or toe of the scythe blade was contained in a socket plate arranged to swing so as to give the desired adjustment to the scythe blade, and which socket plate was held to its adjustment by a screw bolt. The object of the present improvement is to provide means for more rigidly holding the socket plate and the scythe blade in their corresponding adjustments, to which end it consists in roughening the under surface of the free end of the socket plate, and combining it with a plate upon the snath having a corresponding roughened upper surface, which plate operates both as a bearing for the clamping bolt and a clutch plate for the swinging socket to hold the latter in rigid position when the clamping bolt is screwed up.

**IMPROVED COTTON PICKER.**

Orren R. Smith, Raleigh, N. C.—The chief feature of this invention consists of two or more series of pickers formed of flexible spines or toothed rods depending vertically from pivoted bars arranged horizontally, but vibrating in vertical planes, successively. The said pickers strip the cotton from the balls and by their inter-action carry it up and deliver it to a carrier, by which it is conveyed to a receptacle in rear of the pickers.

**IMPROVED DITCHING MACHINE.**

Silvanus P. Evans, Ash Ridge, O.—This invention consists in providing a ditching machine with an apparatus whereby the shoe which bears the coulter may be quickly and readily lowered or raised, as it is desired, to cut the ditch or trench deeper or shallower. It also consists in extending up from the coulter an inclined plane or mouldboard, the upper edge of which projects over a trough or gutter bearing an endless band moved by side chains and end rollers, so that the slice of earth cut by the coulter and side knives of the machine may be broken up in its fall from said mouldboard and more easily delivered to the chute at the rear of the machine.

**NEW TEXTILE INVENTION.****IMPROVED LOOM SHUTTLE.**

Ezra W. Marble, Wilkinsonville, Mass.—This improved shuttle is so constructed that the cop may be placed upon the spindle without having its interior snarled, as is the case when the ordinary spindle is used, thus avoiding the great waste of cotton from the snarling. The spindle is held in place by a lever that supports the heel of spindle with an oval end, while it is itself supported at the other end by a spiral spring. The oval end of lever is designed to help in closing up the spindle when raised at the point out of the shuttle box to receive the cop. The socket for the end of spindle is made to fit a round hole with a side groove at the bottom, to accommodate each of its ears. It is inserted within the shuttle by placing the ears lengthwise of the slot that is intended to receive the spindle, and, after being pressed down to bottom of hole, turned around to let the ears into the side groove.

**NEW HOUSEHOLD INVENTIONS.****IMPROVED FOLDING CHAIR.**

Ernest Smith, London, England.—This folding chair may be easily folded and unfolded, may be adjusted into various positions for use, may be compactly folded for storage or transportation, and forms an easy and comfortable resting place however it may be adjusted. The invention consists in pins, hooks, holes, and pins for connecting the rear legs with the forward legs of the chair frame, and in the chair frame formed of the front legs, the rear legs, the seat bars, and the jointed arms, and their rounds or cross bars, constructed and combined with each other.