

## ENGINEERING INVENTIONS.

A stock car has been patented by Mr. Henry Hess, of Canfield, Ohio. The floor of the car can be so adjusted that the animals cannot lie down, thus preventing the stronger from trampling on the weaker, and the car platform can easily be arranged for use as an ordinary cattle or freight car.

A compound to prevent the fusion of cinder has been patented by Mr. Wesley Case, of Topeka, Kansas. It consists of bicarbonate of ammonia, saltpeter, bicarbonate of soda, resin, and other ingredients mixed and used after a designated manner, to prevent the formation of clinker in the combustion of coal.

A car coupling has been patented by Mr. Charles Uebinger, of St. James, Ind. In combination with a drawhead is a spring bar beneath, with a beveled block secured to the free end of the spring and in front of the drawhead, whereby the coupling links of high and low drawheads may be guided within said drawheads.

A car coupling has been patented by Mr. Joseph F. Fairfield, of Alma, Neb. The coupling is formed of a forked drawhead, in the outer end of which a coupling pin is pivoted, the inner end of the sliding bar being connected with the locking frame on the drawhead, and the locking frame connected with a bar projecting upon the side of the drawhead, the coupling being done automatically and so the cars can be readily uncoupled.

An electric block signal for railways has been patented by Messrs. Stephen J. Swayze and John G. Lane, of Sag Harbor, N. Y. This invention covers improvements on former patents issued to same inventors, including electric locking arrangement for locking the signal until the train that set it reaches the next signal station, when the signal board of the signal next in rear will be released, indicating that the track is clear between it and the first signal ahead.

A steam trap has been patented by Mr. Robert B. Morse, of Naugatuck, Conn. This invention covers a simple and easily applied device more particularly designed for steam heating apparatus, and consists of a circular or disk valve on an axial stem at right angles to the length of a steam pipe, with such connections that, as the steam pipe expands and contracts by heat and cold, the valve will turn for opening and closing the ports for the escape of water condensing in the trap.

## MECHANICAL INVENTIONS.

An oil cup has been patented by Mr. William A. Foster, of Fitchburg, Mass. This invention relates to oil cups where an adjustable valve spindle regulates the flow, and covers an attachment for holding the spindle, so it may be set for any desired rate of feed, and readily changed to a close or open feed.

A process of fastening diamonds in tools has been patented by Mr. Thomas W. Collins, of New York city. The fastening is obtained by means of metal deposited by electricity around the diamond and the adjoining parts of the tool, thus fastening diamonds firmly to the edges and surfaces of abrading and cutting tools, as stone saws, rock drills, etc.

An insertible saw tooth has been patented by Mr. William B. Risdon, of Trenton, N. J. This invention covers a peculiar construction and arrangement by which insertible saw teeth can be used in places where it is desirable to remove and replace the bits or teeth without taking the saw from the mandrel, or removing the holding spring from its seat.

A pulley belter has been patented by Mr. James N. Wilson, of Higginsville, Mo. This is a novel adjustable clamp device to clamp on a driving pulley across the face, and for running the belt on the pulley, it being especially designed for use on thrashing machines, where belts are apt to run off from being long and crooked and run at high speed.

A means for transmitting motion has been patented by Mr. Walter A. Rollins, of Wyattville, Surrey, England. Combined with a shaft having ratchet teeth on its end is a tubular bar, into which the end of the shaft projects on the other part of the machinery, with other devices, whereby motion may be transmitted in one direction in such manner that the parts can revolve independently in the reverse direction.

Improved machinery for rolling wire has been patented by Mr. William H. Jackson, Jr., of Trenton, N. J. The wire is passed through a series of rollers, and through one or more intervening furnaces, the speed of the rollers being easily regulated in such manner that it can be rolled down to a diameter of about one-eighth of an inch, instead of having to be drawn down for such sizes, as heretofore.

A pressure feeder for pulp grinders has been patented by Mr. Edward F. Millard, of Marinette, Wis. A steam or water pressure feeder or presser is contrived to so feed the wood to pulp grinding stones that the piston will be withdrawn by suction or a vacuum when the blocks are ground up, and thus avoid the use of packing, and save the cost of keeping the packing in order.

A brick machine has been patented by Mr. William S. Smith, of Dayton, O. The machine has a wheel with mould openings, a cam driven pawl for revolving the mould wheel intermittently, and plungers worked by cam driven levers, so the bricks will be made and discharged automatically, thus facilitating the manufacture of pressed bricks, and simplifying the construction of machines.

## MISCELLANEOUS INVENTIONS.

An ear ornament fastener has been patented by Mr. George Kremenetz, of Newark, N. J. The invention covers a nut fitting on an ear wire, for holding an ear ornament, with means for clamping the nut on the wire.

A bib for children has been patented by Mr. George E. Kimball, of Franklin, Mass. The bib has on its front a pocket for a nursing bottle, so the clothes will be protected, the bottle held conveniently, and the contents not apt to be spilled nor the bottle broken.

An anchor has been patented by Mr. William Lewis, of St. John, New Brunswick, Canada. This invention covers a peculiar design for an improved anchor, one which is calculated to be simple in construction, not easily fouled, and which will readily take hold on the ground.

A harness saddle has been patented by Mr. Daniel B. Holsburg, of Granville, Ill. This invention, by a novel construction and arrangement of parts, provides to so support the thills that they will not make any side to side motion of the pad, to chafe or gall the horse's back.

An incubator has been patented by Mr. James Rankin, of South Easton, Mass. Improved means are provided whereby the water employed to maintain the required heat is also made to regulate the temperature, and maintain it automatically at a uniform degree.

A necktie fastener has been patented by Mr. Frederick Kubec, of Riverside, Iowa. It is made of two pieces of spring wire, to which the material of the necktie is stitched, the wire being so shaped as to readily hold the necktie in position without being attached to the collar button.

An eaves trough hanger has been patented by Mr. Henry J. Hoepfner, of Athens, O. The hanger is formed of a metal strap, with ends secured to a cross piece in one continuous piece of wire, which is provided with loops through which the nails or screws for fastening the hanging wire to the roof can be passed.

A thill coupling has been patented by Mr. Milton E. Campney, of Muskegon, Mich. This invention covers a peculiar construction and arrangement of parts whereby the clip is so held on the axle that rattling is prevented, and coupling and uncoupling are quickly and easily effected.

A stay roller for sliding doors has been patented by Mr. Le Grand Terry, of Horseheads, N. Y. This invention covers an improved arrangement for guiding the bottom of a sliding door, the roller being held sufficiently firm to prevent rattling, while it is permitted to revolve freely, and without undue friction.

A pneumatic lock has been patented by Mr. Alonzo W. Fuller, of Boston, Mass. In a lock with two piston cylinders, connected at their opposite ends to a bolt mechanism, is a third cylinder with an air compressing piston, connected with and operating the other cylinders and bolt by a suitable valve mechanism.

A ship windlass has been patented by Mr. Ambrose Amiro, of Pubnico, Nova Scotia, Canada. The arrangement of the brake lever and ratchet wheels is such that the brake lever ranges parallel with the drum of the windlass compactly, and affords a simple means of applying great power to the working of the windlass.

A metallic barrel hoop has been patented by Mr. Ellsworth Ford, of Westville, Conn. This invention consists of a half round metal hoop blank twisted at its opposite ends in reverse directions to engage and hold the ends firmly together, and with a rib adapted to bed itself in the wood and hold the hoop in place without nails.

A border light for theaters has been patented by Mr. John T. Preddey, of Carson, Nevada. The invention covers a cylindrical casing, with an open offset in the top, in front of which is a reflector, and in front of the reflector the casing has a hinged wire netting part or door, making a light which is safe, simple in construction, clean, and durable.

An oil cup has been patented by Mr. William H. Thomas, of Santa Ana, Cal. The patent covers such construction as will afford facility in filling the cup, free from liability to loss of filling plug or stopper, a positive lock for means for adjusting the feed, and the oil is caused to drop direct from the point of the feeder.

An improved horse power device has been patented by Mr. Homer Adkins, of Concordia, Kansas. A balanced tipping or tilting horizontal driving wheel is provided, with its whole support below, and means for tipping or tilting the same and making it run steady, lightness being combined with strength, and an easy and steady motion obtained with but little friction.

A bench dog has been patented by Mr. Riley Doty, of Leonardsburg, Ohio. It consists of a channel bar of steel of differently shaped cross section, notched transversely near the upper end to form teeth for engaging the work, and inserted in the bench at a slight inclination from the vertical, being capable of holding work firmly either flat or edgewise.

A bag holder has been patented by Mr. Herbert R. Royston, of Chicago, Ill. This is a simple contrivance of a base piece for attaching to the wall, counter, or other support, with an elastic band stretched between two points of the piece, between which band and base the package of bags is to be placed for being held so as to be pulled out one at a time as wanted for use.

A bung borer has been patented by Mr. Gustav A. Stanger, of Chester, Conn. It consists of a tapering casting with a longitudinal slot, on one edge of which is held a blade, a bottom plate on the lower end of the casting having an aperture forming a cutting end, and with a gimlet pointed screw, making a borer that catches the chips and prevents their dropping into the barrel.

A wire stretcher has been patented by Messrs. Charles S. Older and Leander L. Deering, of Independence, Iowa. Combined with a gripping device and gravity clutches is a lever, and a looped bolt forming the pivot of the lever, and with its loop adapted to receive the bar upon which the gravity clutches are arranged, so the wire is drawn up every time the lever is moved in either direction.

A cider mill has been patented by Mr. Alpheus D. Lair, of Mexico, Ind. It has two endless fabric bands passed over suitable rollers, one of which receives the pomace from the grinding mill and carries it over rollers, above which is a presser plate, the pomace afterward being carried between presser rollers, the pomace and cider being automatically separated, and the mill operating very rapidly.

A marking and shading pen has been patented by Mr. Elbert Alderman, of Portville N. Y. The working end or shading piece is made of India rubber, and by suitably holding or turning the pen in the hand it will make marks of required width for coarse or fine shading, having a steady feed and being much easier used than a brush, while making a smoother mark.

A music holder has been patented by Mr. George Burt, of Fort Madison, Iowa. The body of the holder is made of sheet metal, cut and stamped into any ornamental form, and bent at its lower end into two ears, a spring actuated clamp with slots being pivoted thereto, with spring fingers, and other peculiarities of construction, for holding music on a drum or other band instrument when marching or otherwise.

A fire alarm has been patented by Mr. Charles H. Judson, of Greenville, S. C. In combination with a wire having highly fusible connections is a spring connected with a mechanical bell ringing mechanism, several lines of wire from different parts of a house being so arranged that the melting of any one of them will give the alarm, and record the place of fire on an annunciator in the office or elsewhere.

A bailer for cleaning oil wells has been patented by Mr. James S. Moody, of Summit City, Pa. The bailer consists of a tube with a check valve at its lower end, and a steel neck and valve closing upwardly at its upper end, with a stem connected with the drill line, so a sand line is unnecessary, the gas is allowed to escape, and the bailer can be entirely filled before it is drawn out, so the well can be cleaned more rapidly and thoroughly than at present.

A simple and cheap device to lower the draught on platform wagons has been patented by Mr. Foster H. Cheney, of St. Louis, Mo. There is a broad inner and outer clevis swung from the gear at desired height or place by springs, which relieve any jerk, and permit draught strain to come on chains attached to the axle. The evener bar is firmly clamped by the inner clevis and a flat spring bar through which the evener bolt passes, so that there is no hole to weaken the wood. There is also a detachment device to quickly release the draught animals.

## Business and Personal.

The Charge for Insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

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If an invention has not been patented in the United States for more than one year, it may still be patented in Canada. Cost for Canadian patent, \$40. Various other foreign patents may also be obtained. For instructions address Munn & Co., SCIENTIFIC AMERICAN Patent agency, 361 Broadway, New York.

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Catechism of the Locomotive, 625 pages, 250 engravings. Most accurate, complete, and easily understood book on the Locomotive. Price \$2.50. Send for catalogue of railroad books. The Railroad Gazette, 73 B'way, N. Y.

## NEW BOOKS AND PUBLICATIONS.

Die Physikalischen Grundsätze der Elektrischen Kraftübertragung. By Joseph Popper. A. Hartleben, Vienna.

This pamphlet of fifty-five pages is an introduction to the study of the transmission of power by electricity, enumerating the physical principles involved, together with their mathematical proofs.

CHAMBER OF COMMERCE OF NEW YORK, ANNUAL REPORT, 1883-84. By George Wilson, Secretary. Printed for the Chamber.

Mr. Wilson's many years' experience as secretary of the Chamber, and the care and good judgment he exercises in compiling this record, not only of the proceedings of that body, but of the most important statistics of New York business, renders this volume an especially valuable one, making, as it does, a work unique in its way. The special trade reports cover nineteen leading articles of commerce in New York, all prepared by acknowledged authorities on the subjects treated of.

WORKSHOP RECEIPTS FOR MANUFACTURERS, MECHANICS, AND SCIENTIFIC AMATEURS. Third series. E. & F. N. Spon, New York and London.

The two former volumes of this series have been received with great favor. This one is largely devoted to electrical and metallurgical matters. The article "Electrics" explains a wide range of methods in the practical applications of electricity, and in this specialty, as well as in the department of metals, their alloys and different ways of working, the information given is brought down to the latest dates, and set forth in clear and concise language.

## Notes &amp; Queries

## HINTS TO CORRESPONDENTS.

No attention will be paid to communications unless accompanied with the full name and address of the writer.

Names and addresses of correspondents will not be given to inquirers.

We renew our request that correspondents, in referring to former answers or articles, will be kind enough to name the date of the paper and the page, or the number of the question.

Correspondents whose inquiries do not appear after a reasonable time should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them.

Persons desiring special information which is purely of a personal character, and not of general interest, should remit from \$1 to \$5, according to the subject, as we cannot be expected to spend time and labor to obtain such information without remuneration.

Any numbers of the SCIENTIFIC AMERICAN SUPPLEMENT referred to in these columns may be had at the office. Price 10 cents each.

Correspondents sending samples of minerals, etc., for examination, should be careful to distinctly mark or label their specimens so as to avoid error in their identification.

(1) J. A.—Transfer paper is made by rubbing thin strong tissue paper with a composition consisting of 2 ounces tallow, ¼ ounce powdered black lead, ¼ pint of linseed oil, and sufficient lampblack to make it of the consistency of cream. These should be melted together and rubbed on the paper while hot. When dry, it will be fit for use.

(2) J. M. F. writes: Can I obtain through your correspondents' column some information concerning carving in clay, additional to that contained in the SCIENTIFIC AMERICAN SUPPLEMENT for May 29, 1880, No. 230? A. Modeling clay is any clear gray clay, or if preferred, porcelain clay moistened with water and a little glycerine. The glycerine prevents drying. There is a modeling school in the Cooper Union where you may obtain both information and instruction in modeling.

(3) C. T. B. asks: 1. How much greater, if any, is the specific gravity of water in a lake or ocean at 1,000 feet below the surface than at the surface? A. The specific gravity of water at great depths is no greater than what is due to its compressibility, which is virtually nil. 2. Is there a point in the depths of water at which a body whose specific gravity is just a little greater than water at the surface will, if placed in that water, cease sinking before it rests on the bottom? A. We believe