greater portion can be knocked out by pounding upon the copper.

The masses are then marked, numbered, and recorded, and are shipped to the smelting works, where they are melted down in reverberatories.

Knight's Mechanical Dictionary.

This excellent publication, from which we often give extracts and select engravings, has lately been purchased by the firms of Messrs. Hurd & Houghton, New York city, and Messrs. H. O. Houghton & Co., Riverside Press, Cambridge, Mass., from Messrs. J. B. Ford & Co., the former publishers. The well known reputation of the new publishers is abundant assurance that the work will lose nothing, in point of superiority, in the manner in which the few parts yet to be issued will be brought before the public. We learn from Mr. Knight that the Dictionary will be rapidly pushed forward to completion, and will probably be finished within four months. Some twenty seven numbers have already been published.

NEW BOOKS AND PUBLICATIONS.

CAMP LIFE IN FLORIDA, a Handbook for Sportsman and Settlers. Compiled by Charles Hallock. New York city: Published by the "Forest & Stream" Publishing Company. American News Company, Agents.

We have heard so much of the Adirondacks, during late years, as the "sportsman's paradise" *par excellence*, that it is altogether refreshing to take up a book which suggests the advantages of one of the most beautiful and, save a small part of Florida visited by invalids, least frequented portions of the country. The compiler has embodied, in a handy volume, some excellent papers published in *Forest and Stream*, which were the result of the labors of an exploring expedition sent out by the enterprising publishers of that journal during the last two winters. We can commend it as something very much better than the hybrid productions, half fact, half fiction, in which modern writers, describing the scenes of past sporting adventure, are very prone to indulge.

ORNAMENTAL DESIGNS FOR FRET-WORK, FANCY CARVING, AND HOME DECORATIONS. Part 1, price 75 cents; Parts 2 and 3, $1 each. Edited and Published by Henry T. Williams, 46 Beekman street, New York city.

Since the introduction of the ingenious machine saws for amateurs, with some of which the readers of the SCIENTIFIC AMERICAN are already familiar through the illustrations and descriptions published from time to time, there has been a growing taste for this most fascinating and artistic branch of woodworking. So many beautiful home adornments can be cut out of various colored woods that an endless fund of amusement is found in the manufacture, and in many instances considerable profit beside. The work (published in numbers), the title to which we give above, is one which will be an invaluable aid in the designing of objects to be carved, embracing artistic designs for picture frames, wall pockets, brackets, book racks, book stands, baskets, easels, platters; in fact, a great variety of other fancy articles can be produced by fine saws. The numbers are mailed on receipt of price.

GASFITTER'S AND PLUMBER'S GUIDE. By Joseph D. Galloway, Gas Engineer. Published by the Author. Price, in paper, 75 cents. Philadelphia, Pa.: 1332 Chestnut street.

A handy volume of practical suggestions for the trades to which it is addressed. There are a large number of useful recipes, and a few illustrated descriptions of patented devices invented by the author, together with tables relating to weight of pipes and wire, and other data referred to constantly by workmen. The directions are clear and concise, and comprehensible by any one of average intelligence. The book contains about 100 pages; and its accuracy is vouched for by the long practical experience of its author.

IMPROVED DIARY AND MARGINAL INDEXED BOOK OF DAILY RECORD. Revised and Arranged by M. N. Lovell. Mailed, post paid, for $2.00. Erie, Pa.: Erie Publishing Company.

This diary is so arranged that, by means of marginal indexes, the user can at once turn to the page on which the events of any day are recorded; and also, through an alphabetical index, he can easily find notes of various days on which similar events have happened. It is available for five years. For inventors desiring to keep proper chronological records of their ideas, it will prove a useful aid. It is especially well suited to be in one's pocket during visits to the Centennial, as it affords excellent facilities for jotting down notes, and grouping and easily finding them at will.

REPORT OF GENERAL CHARLES K. GRAHAM, Engineer-in-Chief of the Department of Docks, for the Year ending April 30, 1875. New York city: M. B. Brown, 201 William street.

Recent American and Foreign Patents.

NEW AGRICULTURAL INVENTIONS.

IMPROVED COMBINED CULTIVATOR AND HARROW.

George Croll, Tontogany, O.—This relates mainly to a new mechanical construction, which is such that the beams which receive the shovel plows may be adjusted to run level, whatever the position of the draft bars, and so that, when the said bars are parallel, the beams may incline toward each other. Braces are added, which may be adjusted to correspond with the draft bars.

IMPROVED ANTI-SUCKING BIT FOR CALVES, ETC.

John H. Bailey, Toledo, Iowa.—This is a novel device to prevent the sucking of calves or colts. It consists in a tubular bit, having open ends in communication with the external air, and an opening located inside of the mouth, so that, when the animal attempts to suck, air only will be drawn in through the bit.

IMPROVED MACHINE FOR BINDING GRAIN.

Argyle W. Tucker, Waxahachie, Tex., assignor to himself and L. J. Stroop, same place.—This machine combines several novel and ingenious devices, which together operate as follows: A band procurer moves forward into a band trough and takes up enough straw for a band. On the latter the gavel is caused to fall and then is compressed between fingers. The free end of the band is next carried over and caught by a forked needle, by which it is twisted around the stationary end. As the needle makes its last half revolution, it draws the stationary end out of the jaws of the band procurer and tucks the free end of the band under the body of the same. The mechanism then leaves the sheaf free, and a fork, moving upward and outward, throws it from the machine.

IMPROVED CORN-SHELLER FEEDER.

William B. Quarton, Fremont, Iowa.—This invention relates to certain improvements in feeders for corn shellers in which the ears of corn are carried up by means of endless belts and delivered to the holes or feeding throats of the machine. The improvement consists in using a single broad apron, or wide endless belt, which moves beneath the channels in the feeder, and is provided with buckets, which receive and carry up the ears. It also consists in dividers of considerable hight, which are applicable to machines having four or more throats, and divide the channels into sets of two, thus causing the ears, which are dumped promiscuously, to assume a longitudinal position in the channels, and thereby increasing the feeding capacity of the device.

NEW MECHANICAL AND ENGINEERING INVENTIONS.

IMPROVED AUTOGRAPHIC TELEGRAPHIC INSTRUMENT.

John C. Ludwig, San Francisco, Cal.—This invention relates to a new telegraphic instrument belonging to the autographic or *fac simile* class, and designed to produce a record in the same handwriting as the original written message. The invention consists in an oscillating traverser, vibrating in unison with a similar traverser, at another station, which first traverser makes the circuit through the conducting lines of writing upon a slip of paper, and the second traverser effects the record by puncturing the paper through the instrumentality of a spark from an induction coil, so that the message is recorded in facsimile by a series of little holes or punctures. Another important feature of the invention is the method of preparing the paper upon which the message is written, and it consists in treating it with a mixture of ferrocyanide of potassium and coal oil, which renders the paper non-conducting except in the lines of writing made by an ordinary lead pencil. The invention also consists in numerous other details of construction for which reference must be made to the specification.

IMPROVED SEWING MACHINE FRAME.

Harriet Ruth Tracy, New York city.—This invention consists in an improved construction of the end frame for sewing machines, which frame is provided with peculiarly arranged casters or rollers, and with lugs or ears which adapt the frame to receive a hinge-folding section of drawers without alteration or injury to the said frame.

IMPROVED CAR LIFTER.

General John D. Imboden, Richmond, Va.—This invention relates to means for transferring loaded cars from a track of one width to that of another without breaking bulk. It consists in using inclines located in a pit under the railroad track, movable truck frames, and a vertical lifter; also in combining with the latter crutches, a pitman and stirrups connected with the crosshead of an engine.

IMPROVED COTTON PRESS.

W. W. Wallace, Neckesville, Tex.—This invention relates to the mode of actuating the follower of a cotton press so as to combine convenience and facility of operation with a maximum of compressing power. It consists in connecting the lever arms and follower by arms that are pivoted to each, while the windlass is arranged under the press follower and connected by cords with a set of levers.

IMPROVED EYELETING MACHINE.

John J. Allred, Charlotte, N. C., assignor to himself and Alson G. Jordan, same place.—In this machine, the magazine containing the eyelets and the chute for conducting them to the inserting tool slide forward to carry the eyelet over the tool by a spring, and are forced back by a cam lever worked by the slide of the tool. In going back they work the feeder, by which the eyelets are delivered from the magazine into the chute. The slide of the inserting tool also works the feed, and the punch is worked by a cam on the driving shaft and a spring. The general arrangement is simple and doubtless effective.

NEW HOUSEHOLD ARTICLES.

IMPROVED CLOTHES HOLDER.

James Lesh, Warren, Pa. The invention is an improved device for holding bed clothes or coverings properly stretched, and preventing their being thrown or pushed off in consequence of the restive movements of children while asleep. It is also applicable for holding lap robes when riding. The same consists of an elastic band having a sheath or guard hook attached at one end, and tapes or cords attached to the other. The hook is inserted through the clothes or robe, and the strings are tied to the person or to some fixed object. The elasticity of the band enables the clothes or robe to yield and adjust themselves to the movement of the legs or body.

IMPROVED IRONING STAND.

John Finfrock, Piqua, Ohio.—The invention relates to the manufacture of ironing stands, so that garments can be conveniently manipulated in the process of ironing, and so that they may be readily folded up and packed in a small space. The stand consists of two posts, provided with crossbars at top and connected by a rail jointed at one point, the board being open at the end and provided with a clamp screw.

IMPROVED INVALID BEDSTEAD.

William Huntress, Richmond, Va.—A portion of the mattress is supported on a hinged frame, which, being dropped, allows a vessel and a chute to be adjusted in a portion of the bed convenient for the requirements of the occupant.

IMPROVED PICTURE NAIL.

John P. Stockton, Jr., New York city.—This inventor proposes a nail having a stationary disk upon it which presses close against the wall, and so affords an additional support, and having a knob composed of two parts, the inner portion being loose. The idea is to allow of the ready adjustment of the suspending cord or wire without requiring the raising of the suspended object.

NEW WOODWORK AND HOUSE AND CARRIAGE BUILDING INVENTIONS.

IMPROVED WAGON BRAKE.

Halvord Markrud, Ettrick, Wis.—This inventor proposes an arrangement of brakes in connection with the tongue, which is pivoted to the hounds and has rear branches which act upon the horizontal brake levers. By this, when the wagon presses forward against the tongue, the levers are operated to press shoes forward against the wheels, and the friction of the wheels causes the shoes to rise, bringing their wider part against the wheels and making the pressure greater. When the wagon is backed, suitable devices prevent the shoes from acting upon the wheels.

IMPROVED WAGON BOX.

Timothy Jennings, Moulton, Iowa.—This invention relates mainly to an improved and strong construction of a wagon body which may at any time be used with or without top box, which forms a rigidly attached extension of the same. The different binding straps and stays connect the body in a solid and durable manner, so as to impart to it the required strength and resistance to heavy loads, while they may be readily replaced without difficulty when they get broken or injured by use.

IMPROVED SHIFTING BUGGY TOP.

Henry M. Gillespie and Virgil True, Laclede, Mo.—This invention relates to certain improvements in shifting tops for carriages, buggies, etc; and it consists in a horizontal bottom rail, to which the top frame is attached, which said rail is slid into grooves around the top edge of the seat and held therein by a locking key. It also consists in a double set of vertical supporting props for the top, whereby the latter is more securely held in an elevated position.

IMPROVED SCROLL SAW.

Wm. C. Margedant, Hamilton, Ohio. The object of this invention is to provide a straining device for a scroll saw adapted to a great length of stroke, and of uniform tension or strain through all parts of said stroke. It consists in a spring bent in a circular, elliptical, or oval form, so that the two ends approach each other, in combination with a lever placed between said ends and swiveling upon either an independent or imaginary fulcrum, so that as the lever is depressed the ends of the spring are active upon the same upon opposite sides of the fulcrum, and as the lever approaches its limit of movement the ends of the spring approach an alignment, and the strain of the spring is correspondingly diminished, just in proportion as the leverage of the lever increases, thus rendering the strain uniform throughout its entire movement. The invention also consists in the peculiar construction of a hollow pitman pin, to be filled with lubricating material, and designed to operate as an automatic lubricator.

IMPROVED BAND SAWING MACHINE.

Wm. C. Margedant, Hamilton, Ohio.—This invention relates to ingenious and valuable improvements in band sawing machines; and it consists principally in the construction of the upper band saw wheel, which is made with an independent loosely sliding face, periphery, or rim, upon which the saw blade runs, the object being to obviate the bad effects arising out of the momentum of the said upper wheel when the lower wheel and actuating mechanism are stopped. The invention also consists in a double acting brake, designed to operate upon both sides of the periphery of the driving wheel to prevent strain and uneven wear upon the shaft, and also in the peculiar construction of back thrust guides, which consist in a series of balls or spheres, which are so arranged as to present always a new surface to the back of the saw blade. The invention also further consists in the means for adjusting the upper band saw wheel, and in other details of construction.

IMPROVED WATER SUPPLY AND VENT FOR TRAPS.

John H. Morrell, New York city.—This inventor has recently devised several useful devices of similar nature to the present one, many of which have been illustrated in late issues of this journal. He now suggests certain new improvements in conducting water from the roof of a building to the water closet, or other traps connected with the building, by leading a pipe from the roof, and connecting it at a point below the drop cup or pan of the water closet, either to the bowl or pipe leading therefrom to the trap. The object is to prevent the escape of sewer gas into the house.

IMPROVED MACHINE FOR BORING BLIND-STILES.

Freeland H. Dam, St. Cloud, Minn.—This is a machine for boring blind stiles, fence rails, and other articles with holes of uniform depth at equal space from each other, and for carrying on the boring operation continuously. By suitable mechanism the exact feed of the boring tools, in either direction, is easily and quickly produced; and by the alternate action of the same one stile is bored while the other stile is fed forward, so that a continuous work of the machine is obtained.

NEW CHEMICAL AND MISCELLANEOUS INVENTIONS.

IMPROVED COMBINED CANE AND WHIP.

Oliver H. Saxton, Washington Court House, O.—This inventor has devised an ingenious combination of a cane and a carriage whip. The whip portion proper is flexible and made solid, and is attached to tubular sections, which are telescopic, so that, to extend the whip, they may be drawn out and secured by their screw joints.

IMPROVED BOTTLE STOPPER.

Adolph Luthy, New York city.—In this a curved-wire spring lever, that carries the stopper, is secured on the bottle by a bail pivoted to the neck band of the same, binding on a recessed top rest of the stopper plate. The lever is first pressed tightly on the stopper, and the bail then slid up over the same, holding both stopper and lever firmly in position by the spring action of the stopper and lever. The device is cheap and easily operated.

IMPROVED SCHOOL DESK.

Thomas Redmayne, Sheffield, England, assignor to William Redmayne.—This inventor proposes to make the plane surface which forms the desk capable of being adjusted and fixed either in a horizontal position, to serve as a table, in a slightly inclined position, to serve as a desk, or in a nearly vertical position, to serve as a back to the seat, which is ordinarily arranged in connection with such desks. The invention consists in mechanism for adjusting and altering the angle of the desk, and also of mechanism for locking or fixing the board or desk when it has been adjusted in the required position, so that it cannot be altered, except by releasing the locking mechanism.

IMPROVED TAILOR'S APPARATUS FOR DRAFTING PATTERNS

John Bellamy, New York city.—This inventor has devised an ingenious chart, which represents, in miniature, the forms of the different parts of the shirt. The points to draw and cut to are numbered on all the parts to correspond with the actual measures on a scale of proper size for laying off the true measures on the cloth to be cut. A different scale is used for each different size or number of shirt.

IMPROVED BELL METAL TOY BALL.

Jonathan C. Clark, Middle Haddam, Conn.—This is a hollow ball, which is made of bell metal, and in one side of which is formed a slot to allow the metal to vibrate, and thus give a sound. In the ball are formed a number of holes to allow the sound to escape freely, and within the cavity of the bell is placed a small ball, to act as a hammer to cause a sound as the said ball is rolled or shaken.

IMPROVED CIGAR PIPE.

Robert L. Weed, New York city.—This inventor proposes to overcome the prejudices of people who object to pipes by a little device which enables a smoker to enjoy his favorite tobacco, and at the same time to appear as if inhaling the fragrance of a cigar. It consists in a hollow sectional tube, resembling a cigar, made of wood or other suitable material. The tobacco may be readily compressed by the finger into both sections, so as to form a filling corresponding to that of a cigar, while the smoker can always secure and know the kind and quality of tobacco which he is about to use.

IMPROVED YARN-PRINTING MACHINE.

James Short, New Brunswick, N. J.—This is a very ingenious machine, devised for printing the yarn used in carpet manufacture. Its mechanism it would be impossible to explain without the aid of detached drawings; but the essential portion consists of new operative mechanism for a thread printing drum, by which the latter is greatly simplified.

IMPROVED GLOBE ATTACHMENT TO CLOCKS.

Henry Fick, New York city.—In order to show the position of the earth at any hour, this inventor arranges a globe so attached to a clock that it turns in unison therewith, and, at the same time, is free to be turned forward or backward by hand at any time in case it may be required to do so. When let go by the hand, the globe will automatically return to its true position, relatively, to the clock.

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