

usual manner, and separated by single sheets of varnished paper. The break piece is Foucault's automatic, in which the rupture of the current occurs at the surface of mercury covered by a layer of absolute alcohol.

The performance of this coil is quite extraordinary for an instrument of such small size. When operated with two cells of Bunsen's battery, it gives sparks three and a half inches in length; and with one large cell of the Grenet battery, three inch sparks are obtained.

DECISIONS OF THE COURTS.

United States Circuit Court.--Eastern District of Michigan.

PATENT HOTEL REGISTER.--CHARLES L. HAWES vs. WILLIAM W. ANTISEL. [In equity.--Before Longyear, J.--February, 1875.]

In order to defeat a patent on the ground of want of novelty, the proof of prior use or previous knowledge must be such as to establish the fact clearly and satisfactorily, and beyond a reasonable doubt.

Where the proofs are contradictory, mere preponderance is not sufficient to sustain the allegation. The preponderance in such case must be such as to remove all reasonable doubt.

To doubt in such a case is to solve the question in the negative. Letters patent No. 63,889, for a new and useful Hotel Register, granted to Charles L. Hawes, April 16, 1867, sustained.

The invention in question is what is commonly known as the "advertising hotel register," the book being constructed so as to have inserted advertisements at the top and bottom and on the margin of each page.

No advertising hotel register book purporting to antedate complainant's invention was put in evidence. Such a book, duly verified, would be the best evidence possible.

The witnesses on both sides testify from memory alone, unaided by any memorandum or writing whatever. The fact itself, or of concurrent facts. The uncertainty of memory as to dates, under such circumstances, is well understood; and where, as in this case, the event in question was one not calculated to fix itself in the memory of the persons called to testify.

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Four witnesses testify to the use of an advertising register at the place named in 1855, and five, including the then clerk or manager for the proprietor, George R. Southworth, testify to the contrary.

The conflict of testimony is not whether there was or was not a register or book of some kind used at each of the hotels in question during the periods of time covered by defendant's testimony.

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Upon the whole consideration, it results that there must be a decree for the complainant according to the prayer of his bill.

Decree accordingly. [J. J. Allen, W. W. Taylor, and E. C. Walker, for complainant. Moore and Grimm, for defendant.]

Recent American and Foreign Patents.

NEW AGRICULTURAL INVENTIONS.

IMPROVED PLOW.

Irvin Freeman, Corpus Christi, Texas.--This invention relates to a shovel or subsoil plow, and consists of a hook rod attached thereto, and a lever having a pawl that works in a beam rack.

IMPROVED HARROW.

William Frank, Mound Station, Ill.--This invention relates to certain improvements in harrows, and it consists in three equilateral triangular frames, constituting a sectional harrow in which the parts are capable of use either singly or collectively, and with either angle for the front.

IMPROVED CORN HUSKER.

William Allen Dick, Cleves, Ohio.--This is a kind of pod angershaped tool, with a pointed top a little in advance of the cutting lip arranged on a horizontal revolving axle, in combination with a sliding table to feed the corn ears up to the tool.

NEW CHEMICAL AND MISCELLANEOUS INVENTIONS.

IMPROVED CIGAR BOX.

Charles S. Brown, Baltimore, Md.--The object of this invention is to provide a cigar box better adapted to preserve the cigars from dampness, and so constructed as to allow the quality and brand of the cigars to be inspected without opening the box or breaking the revenue stamp.

IMPROVED OPERA CHAIR.

Ira Chase, New York, and George M. Ball, Green Point, N. Y.--The new feature in this device consists in telescopic braces attached to the lower part of the support and to the edge of the seat.

IMPROVED HUNTING JACKET.

Henry L. Daigre, Alexandria, La.--This coat contains the requisites for hunting, distributed in a neat and convenient manner over the body. In the skirts are game pockets, having side gussets and bottom nettings.

IMPROVED EGG CARRIER.

Wendelin Weis, St. Paul, Minn.--This inventor proposes to cheapen and simplify egg-carrying devices by doing away with the hinged covers or sheets which separate the horizontal trays and providing the lateral partition strips of the egg cells with broad bottom and narrow top extension pieces that serve to support the eggs in an equally secure manner.

NEW WOODWORKING AND HOUSE AND CARRIAGE BUILDING INVENTIONS.

IMPROVED WAGON WHEEL SCRAPER.

Norton Sage, Pekin, Ill.--In order to keep the tires of wagon wheels free from sticky mud, in this invention there is provided a bent iron bar attached to the rear axle, and having at its outer end U-shaped scrapers, which accommodate themselves to the rim of the wheel, no matter in what position the latter may be.

IMPROVED SCROLL-SAWING MACHINE.

Jerome H. Plummer, Brooklyn, N. Y.--The new features in this machine are a reciprocating saw frame (attached to a table extension) and slotted arms above and below, which serve as guides for the frame. The extension has a curved arm, which supports a sheaf for holding tools.

IMPROVED CHILDREN'S CARRIAGE.

Ernst Krueger, New York city.--This relates to a novel and ingenious construction of the body, which has a flexible bottom stretched by lazytongs frames. The axles are similarly extensible, and the whole is adapted to be folded in its longitudinal axis so as to be conveniently packed for storage, etc.

NEW MECHANICAL AND ENGINEERING INVENTIONS.

MACHINE FOR PACKING TOBACCO IN BOXES.

James B. Farrar, Cary, N. C.--This invention relates to an improved machine for filling and packing bags or packages of smoking tobacco. It consists in an intermittently revolving belt provided with seats in which the bag holders are placed, containing the bags and the bag shapes.

IMPROVED CAR COUPLING.

John H. Johnson, Brooklyn, Mich.--The new feature in this is a fulcrumed side lever attached to a vertically swinging drawhead, which last may be set and worked at any high for coupling.

IMPROVED LEVER POWER.

Henry C. Bell, Edina, Mo.--A vibrating lever is provided with notches or sockets, adapted for receiving the links or chains which pass around the object to be raised. The lever is suspended and vibrates on a central pivot, so that the hoisting chains are alternately slackened and subjected to strain, each chain being shortened when slack.

IMPROVED DEVICE FOR CHANGING SPEED.

Joseph W. Mead, Dupont, Ind.--Instead of the cone pulleys and belts now in use, a conically faced disk is proposed, located on the driving shaft that transmits the power by conical friction wheels to a similar conically faced disk of the shaft to be driven.

IMPROVED SEWING MACHINE.

Josiah Glines and Noel W. Stiles, Postville, Iowa.--The novelty here is a shuttle carrier mounted on a pair of cranks, and operated by a crank on the driving shaft in such a manner that the shuttle travels in a true circle without revolving on its own axis, and thus does not twist the thread.

IMPROVED TOBACCO-CUTTING MACHINE.

Augustus A. Hagen, New York city.--For cutting tobacco in a rapid and easy manner, this inventor suggests a new machine having a cutting knife, to which a diagonal shear cut is imparted by a compound slide mechanism.

IMPROVED NUT FASTENING.

Robert C. Watson, Maysville, Ohio.--An eye stud is formed on each end of one of the fish bars, to receive one end of a locking plate. Said plate has holes to fit over the nuts, and its other end is connected at the middle of the joint, where it meets another similar plate fastened to the other end of the fish plate.

IMPROVED WINDMILL.

John Cook, Harlem, Ohio.--In this the crank-shaft bearing is connected to the horizontal beam which supports the machine in a simple and efficient way by means of stirrups or yokes. Another new feature is a joint in the beam for the tail vane to swing around out of the wind when it blowstoo strong, in combination with a weighted lever for keeping the vane in the wind.

NEW HOUSEHOLD ARTICLES.

IMPROVED FLUTING IRON.

W. F. Fisher and A. C. Brown, Bremond, Tex.--The invention consists in a hollow smoothing and glossing iron, in which a fluting iron is inserted, the latter being also hollow to adapt it to receive a heating block, so that the several parts may be, so to speak, nested, thus economizing space, material, and the cost of manufacture, and combining several implements in one.

IMPROVED CARRIAGE CURTAIN FIXTURE

Daniel R. Knight and John M. Ripple, Waynesborough, Pa.--This invention relates to certain improvements upon the carriage curtain fixture for which letters patent No. 166,114 were granted July 27, 1875; and it consists in the improved construction of the roll, the method of attaching the curtain thereto, a stop device for adjusting and regulating the height of the curtain, and the means for fastening the sides of the curtain.

IMPROVED LANTERN.

Patrick J. Clark and Joseph Kintz, West Meriden, Conn.--A yoke attached to a metal cap above the globe holds the latter to the lantern, while allowing said globe to rise and fall. There are new devices for concentrating the air on the flame, and for the ready admission and securing of the burner. The invention is quite simple and easily constructed.

IMPROVED PAN.

John C. Milligan, South Orange, N. J., assignor to Lalance & Grosjean Manufacturing Co., New York city.--The object here is to enable pans to be made of thinner and lighter metal than is ordinarily the case, without detaching from the wearing quality, and also to increase the capacity of the utensil.

IMPROVED FOLDING CRADLE.

John Weich and John Jefferys, New York city.--The bottom of the cradle is hinged to one side so as to turn up. The ends are each made in two parts hinged together, and are also hinged to the sides. The rockers are pivoted at one end, and secured at the other by movable pins. With this construction the cradle may be folded so as to require but little space, and be compact in form.

IMPROVED CURTAIN FIXTURE.

Rudolph J. Pospisil, Chicago, Ill.--This is a curtain roller turning in spring brackets, bearing on its ends, and having cords wound in opposite directions around each end, to raise and lower the rollers. The cords are guided in front hooks of the brackets. An illustrated description will be found on page 306 of the present volume of the SCIENTIFIC AMERICAN.

IMPROVED STOVE.

Robert S. Bostwick, Jackson, Mich.--The air passes upward between the fire pots, from side channels into an air chamber, and then mixes with the smoke and fire gases from one fire pot. The sheet of air that is thus supplied to the top of the fire produces the more thorough combustion of the fuel and a higher degree of heat.

IMPROVED FOLDING CHAIR.

James H. Bean and Richard W. Box, Pulaski, N. Y.--In this chair the seat, which is pivoted to the back part, and the hind legs slide between the front legs for folding. The hind legs rest by projecting side lugs on the front legs, when the seat is thrown in position for use. This is a simple and strong article, easily packed and well suited for camp use.

IMPROVED CURTAIN FIXTURE.

George C. Mathers, Louisville, Ky.--This invention is an improvement upon that for which a patent was granted to the same inventor February 16, 1875. The improvement consists chiefly in arranging on the same axis both the friction pulleys over which the cord passes, and in locating them above the grooved pulley which is attached to the end of the curtain roller.

NEW BOOKS AND PUBLICATIONS.

APPLETON'S AMERICAN CYCLOPEDIA, VOL. XIII, "Palestine" to "Painting." In Sixteen Volumes, \$5 each. New York city : D. Appleton & Co., Broadway.

The thirteenth volume of the revised edition of this work has lately been issued. It opens with an excellent colored map of the Holy Land, which accompanies an article in which due reference is made to the latest explorations and archeological discoveries in that interesting portion of the globe.

Inventions Patented in England by Americans.

[Compiled from the Commissioners of Patents' Journal.] From October 19 to October 23, 1875, inclusive.

- AIR COMPRESSING ENGINE, ETC.--E. Cope et al., Hamilton, O. ARTIFICIAL FUEL.--T. H. N. McPherson, Washington, D. C. ATTACHING BUTTONS, ETC.--D. Heaton, Providence, R. I. BALE TIE.--T. H. Murphy, New Orleans, La. BUCKLE.--W. T. Reaser, Centralia, Wis. CUTTING OUT TABLE.--J. Herts, New York city. DIAMOND HOLDER.--J. W. Branch, St. Louis, Mo. GRINDING MACHINERY, ETC.--J. W. Blake, Jersey City, N. J. LEAD TRAP.--F. N. Du Bois, New York city. PRINTING INKING APPARATUS.--A. Campbell, Brooklyn, N. Y. RAISING AND DELIVERING GRAIN, ETC.--W. H. Brown, New York city. REFRIGERATOR, ETC.--L. C. Cattell, Cleveland, Ohio. WATER METER.--D. W. C. Taylor et al., Brooklyn, N. Y.