

IMPROVEMENT IN BILLIARD TABLES.

Attempts have been made to apply supplementary sections of cushion to pocket billiard tables for the purpose of transforming them into carom tables, but these efforts have failed because the manner in which the supplementary sections were applied tended to deflect portions of the main cushion or of the supplemental cushion from a true line, and thus interfere with the proper working of the table.

The engraving shows a novel and effective method of securing the supplemental cushion in place without distorting the faces of the cushions. The removable cushion piece, A, is of the usual form, and is fitted so as to fill the gap between the end and side cushion and render the arrangement of the cushions virtually the same as if the main cushions were mitered at the corner of the bed. The supplemental cushion, A, is attached to an angled casting, B (Fig. 2), and is drawn to its place by a screw passing through a yoke, C, which bears against the outer side of the cushion rails.

The side pockets are closed by a straight section of cushion, drawn to its place by a screw passing through a straight yoke.

The advantages of this invention will be readily recognized by those familiar with the requirements.

This device was recently patented by Mr. John Walsh, and is being manufactured and introduced by The H. W. Collender Co., 788 Broadway, New York city.

A Powerful Eight-inch Gun.

The *Army and Navy Register* says: "Gen. Stephen W. Benet, Chief of Ordnance, U. S. A., during his visit to Sandy Hook, last week, ordered a continuance of the experimental tests of the eight-inch chambered rifle with which such excellent results have recently been obtained. The gun has already been fired some thirty-five times, but General Benet desires to have it tested still further, and if it sustains the strain of 100 rounds its value will be shown to be very great. These eight-inch guns which were fired with only thirty-five pounds of powder before they were chambered now take a charge of fifty-five pounds, and are capable of penetrating ten inches of iron at a distance of 1,000 yards. These results are very remarkable, when it is considered that the old ten-inch smooth bores, which were converted into eight-inch rifles, were fired with a charge of only sixteen pounds of powder, and with a shot weighing only 120 pounds, while the converted gun takes a charge of fifty-five pounds and a shot which weighs 180 lb."

DOUBLE TREADLE ATTACHMENT.

In running sewing machines and other light machinery in which foot power is used intermittently, a great deal of effort is expended in stopping and starting the machine, and the trouble increases with the increase of size and weight of the moving parts, so that it has been impossible to take advantage of heavy flywheels and a continuous motion. The engraving shows a treadle attachment invented by Mr. D. S. Van Wyck, of Fishkill Plains, N. Y., and recently patented in this country, in Canada, England, France, and Germany. It will be seen that the treadle levers are very long, and the stool upon which the operator sits is inclined so that the greater portion of the weight of the body is on the treadles, and the latter being long the greater portion of the weight is thrown directly upon the eccentrics on the driving shaft of the machine. The treadles are worked with the legs in alternation, the entire muscular force of the leg being available instead of the muscles of the foot and ankles merely as in ordinary treadle mechanism. In this device a heavy fly wheel is employed, and the belt runs over a pulley on the sewing machine, and a tightener and brake which are operated by the knee are used to stop and start the machine, the hands being left free to be applied to the work. The large flywheel is rotated continuously, and the machine head may be stopped and started without making any noticeable difference in the motion of the balance wheel and treadles, thus saving a great deal of labor generally expended in starting and stopping. The movement is similar to that of walking, the weight of the body being transferred from one foot to another, and the exertion is healthful rather than hurtful.

The usual heavy balance wheel on the machine head is replaced by a small pulley, which can be easily stopped and started while the heavy driving wheel continues to rotate, affording an equable motion, and economizing the power applied. The machine is manufactured in Poughkeepsie, N. Y., and will be exhibited at the coming New York State Fair and at the American Institute Fair.

For further particulars address the patentee as above.

Iridescent Glass.

One of the principal manufacturers of iridescent glass is M. L. Clémanpot, who invented and patented the process of producing iridescent effects on glass by the reaction upon it of divers chemical agents under pressure and at a high temperature. Under the name of glass, M. Clémanpot includes all substances resulting from the fusion of silica, which acts as an acid with bases, such as potash, soda, lime, oxide of lead, and the like. In submitting one of these compounds—*e. g.*, glass with a base of potash, soda, lime, or lead—to

manufacture of pearls and opals, imitations of antique glass, and similar work.

MISCELLANEOUS INVENTIONS.

A safety cylinder cock for steam engines that will act automatically to discharge water that may be in the cylinder at any time, and thus avoid the danger arising from the presence of such water, has been patented by Mr. Thomas L. Smith, of Ames, Iowa.

An improved windmill has been patented by Mr. Lewis C. Ashley, of Detroit, Mich. The object of this invention is to furnish windmills simple in construction, inexpensive in manufacture, and not liable to get out of order.

Messrs. Leopold Michel and Charles Schirrmeyer, of Brooklyn, E. D., N. Y., have patented an ash box to be placed upon the sidewalk at tenement houses and in other places to receive ashes and garbage. It is so constructed that the ashes may be conveniently sifted as they are being put into the boxes, and the ashes and garbage can be readily shoveled out. The device may be used for coal boxes and for other purposes.

An improvement in book-binding has been patented by Mr. James W. Loveridge, of Jersey City, N. J. The object of this invention is to lighten the expense and labor of binding books by enabling the binder to stamp, gild, or print the covers and back at one operation. It consists in forming a book cover in one piece of a material of uniform thickness to allow the covers and back to be stamped, gilded, or printed at one operation, and grooving the inner side of the back to give flexibility to the back of the book.

An improved apparatus for producing copies of writings has been patented by Mr. Aaron J. Underhill, of Appleton, Wis. The object of this invention is to provide means for producing facsimile copies of writings, drawings, or delineations in a more simple, inexpensive, and expeditious manner than has heretofore been done.

Mr. Theophilus Larouche, of Williamstown, N. Y., has patented an improved thill coupling. This invention consists in a novel construction and form of the pivot of the thill iron, and the combination therewith of a set screw working in the socket of the clip.

Mr. Gustavus O. Goessling, of Jersey City, N. J., has patented an improved dish or plate which is divided into several compartments for the different kinds of food, and with an improved

rim to prevent the plates from tipping when several are placed on top of each other.

Mr. Charles W. Allen, of Pine Ridge Agency, Dakota Ter., has patented a hay rake and buncher, so constructed that the hay may be dumped by the advance of the machine.

Mr. William G. Patton, of Park's Station, Tenn., has patented an improved rotary cotton chopper, of which nearly all the parts can be readily constructed, repaired, and replaced by an ordinary blacksmith.

An improved stalk cutter, patented by Mr. Brainerd W. Smith, of Nineveh, Ind., is so constructed as to lay the stalks in proper position and cut them with certainty. The invention consists in combination of devices that cannot be clearly described without engravings.

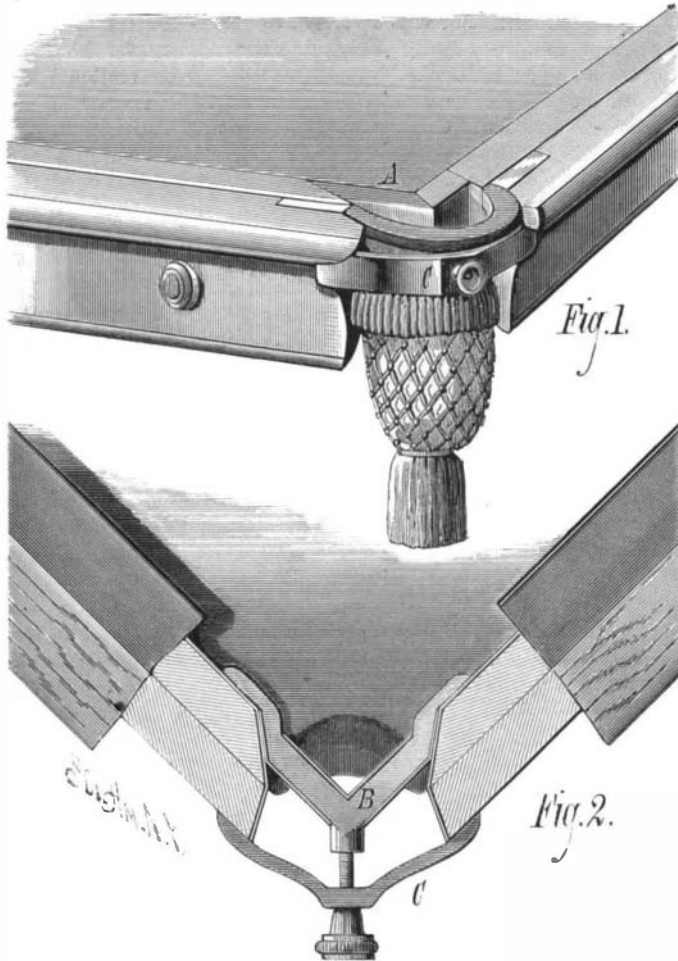
Mr. Carl W. Stauss, of Colbus, Prussia, Germany, has patented an improved reed ceiling which is very light and durable. The invention consists in a ceiling formed of two adjoining layers of coarse and fine netting, made of longitudinal reeds and transverse wires attached to strips nailed to the under side of the floor beams and covered with plaster.

Mr. Josias R. King, of St. Paul, Minn., has patented a calendar, which he calls the "Economic Advertising Calendar." Its cost is small compared with those now in ordinary use. It will furnish all information usually contained in calendars, and the information is presented to the eye in a new and compact form.

An apparatus for piercing ears for earrings, so constructed as to facilitate the operation, lessen the pain, and allow the hole to be made in exactly the desired spot, has been patented by Mr. Martin Haller, of Ann Arbor, Mich.

Mr. Denis Minogue, of Chicago, Ill., has patented a snap hook in which the ring can be readily engaged and from which it can be as readily disengaged when desired, but not accidentally.

Mr. Edward B. Carter, of Huntsville, Ala., has invented a device for lifting dead bodies and placing them in the coffin. It consists of two standards having vertically adjustable rods that support a horizontal beam, from which depend straps that may be looped about the body, so that the body may be lifted and moved by persons taking hold of the ends of the beam and raising the beam from off the vertical rods.

**WALSH'S IMPROVEMENT IN BILLIARD TABLES.**

the action of the different acids, and under a pressure of from thirty to seventy pounds per square inch, iridescent, nacreous, or similar effects, resulting from the decomposition of the glass, are obtained. If among other reactions, under a pressure of from thirty to seventy pounds, water acidulated with hydrochloric acid in the proportion of fifteen per cent of acid is employed, nacreous and iridescent effects resembling those of ordinary mother-of-pearl, or nacre, are obtained. It is said that the same effect can be produced without pressure. The applications of this process are numerous, and include the production of nacre, the

**VAN WYCK'S TREADLE ATTACHMENT FOR SEWING MACHINES.**