

MISCELLANEOUS INVENTIONS.

Mr. Goldsborough Robinson, of Louisville, Ky., has patented a process of treating leaf tobacco for improving its color and quality, which consists in immersing the tobacco in alcohol and then drying it.

Mr. Charles Coon, of Saugerties, New York, has patented a process of repulping paper, which consists in causing the beater engine to operate upon the same while suspended in a hot bath.

Messrs. John S. Headen and John I. Spainhower, of Pleasant Hill, Mo., have patented an improvement in that class of boiler washing machines in which an oscillating-lever or analogous device is employed to press or squeeze the clothes, said lever working in a clothes receptacle having a perforated semicircular bottom and placed in a sheet of galvanized iron boiler that is intended to be set over a fire.

Mr. Andrew J. Clark, of Little Falls, Minn., has invented an improved book for holding blank forms, the object of which is to preserve the blanks in good condition, and to enable the different kinds to be readily and quickly referred to and taken from the book.

Mr. Merrill R. Skinner, of Foster Brook, Pa., has patented a swivel hook for connecting and tightening ropes and cables without removing them from the pulleys or shafting, and which is simple in construction and effective and convenient in use.

An improved ice pitcher of simple construction, with a removable lining of porcelain, has been patented by Mr. Herman Vasseur, of Wallingford, Conn. The invention consists in an ice pitcher containing a removable lining of porcelain, glass, or similar material resting upon the detachable bottom of the pitcher.

Mr. Jasper T. Cronk, of Hoboken, N. J., has patented a simple and convenient means of adjusting a clothes line and hanging the clothes from a window. The invention is an improvement on the line fastener for which Letters Patent No. 186,991 were granted to the same inventor February 6, 1877.

An improvement in pianoforte agraffes, patented by Mr. Edward T. Bowlby, of Dixon, Ill., relates particularly to improvements in the agraffe which clasps the strings to the bridge on the sounding board; and the object of the improvement is to prevent the disagreeable jarring of the strings caused by the springing of the frame of the instrument and the setting of the bridge and sounding board.

Mr. William Harkins, of Dunkirk, N. Y., has patented a car coupler formed of a draw-head having an extended arm and a coupling bar at one side with a recess between. A horizontal key is propelled by a pinion gearing into a rack on the key or by a spring. The pinion has a lever arm attached to it which, when the key is set, extends across the recess, so as to be struck by an entering bar of the opposite coupler. When this lever is struck the key is thrown forward by the combined action of the revolving pinion and spring or by the pinion without the spring, and passing through a slot of the coupling bar, holds the cars coupled.

IMPROVED WINDMILL.

The windmill represented in the annexed engraving has its wheel mounted on a vertical shaft, in a strong, well-braced, octagonal timber tower, provided with shutters which may be opened or closed to control the motion of the wind wheel, or to stop it altogether, as circumstances may require. The shutters are hung loosely so that they will open by the force of the wind.

The wheel consists of upper and lower radial arms extending from hubs placed on the vertical shaft. Between these arms are secured vanes or paddles, which are set at a suitable angle to receive the wind; the outer vane inclining inward from the end of the arm at an acute angle, and the others placed behind and parallel with it. By this arrangement the air passing through the wheel is utilized to the greatest extent: striking the first vane on the outer row, it is guided to the second vane on the second row, and from this to the third vane on the inner set, and so on.

In a mill of this construction the wind from any direction may be utilized to the fullest extent. The wheel and tower are simple and inexpensive, and the mill is adapted to general use.

Wind power is certainly cheaper and more universal than any other, and the machine shown in the engraving seems well adapted for utilizing it.

Further particulars may be obtained by addressing the inventor, Mr. Thomas Dwees, San Antonio, Texas.

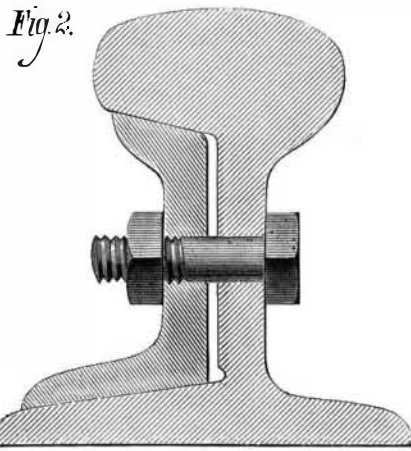
A Night Light.

A simple way to produce an illuminating composition is thus described in *Industry*: Cleanse oyster shells by well washing, expose them to a red heat for half an hour, separate the cleanest parts, and put into a crucible in alternate layers with sulphur; now expose the vessel to a red heat for an hour at least. When cold break the mass, and separate the whitest parts for use. If inclosed in a bottle the figures of a watch may be distinguished by its aid. To renew the luminosity of the mass place the bottle each day in the sun, or in

strong daylight; or burn a strip of magnesium wire close to the bottle. The sulphide of lime will thus absorb light, which will again be available at night time.

IMPROVED RAIL.

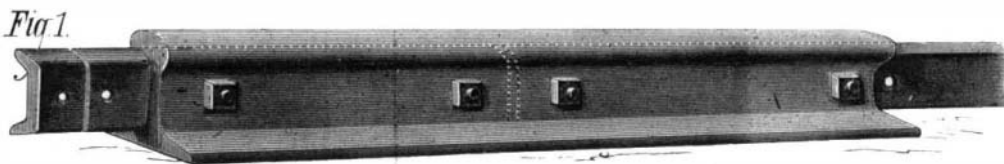
The annexed engravings represent an improved rail recently patented in this country, also in England, France, Germany, and Belgium. It is intended to avoid the noise and



VAUGHAN'S IMPROVED RAIL.

jarring common to the ordinary forms of rail by preventing the depression of the ends of the rails at the joints. This construction, besides conducing to the speed, safety, and comfort of travelers, and increasing the durability of the track, adds to the durability of the rolling stock and machinery run upon it.

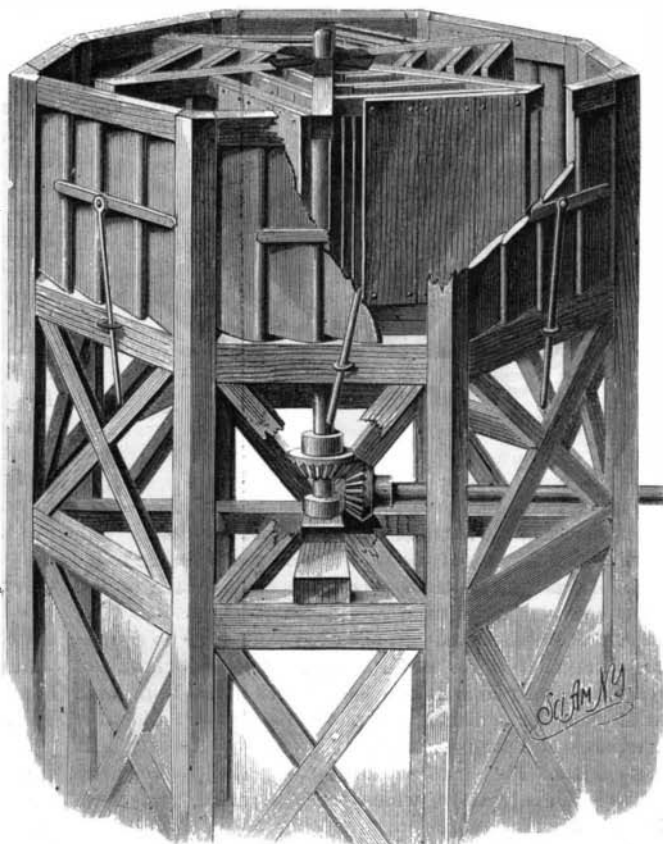
The mechanical construction will be understood from the engravings, Fig. 1 being a perspective view, and Fig. 2 a transverse section.



VAUGHAN'S IMPROVED RAIL.

The rail is made in two parts, one of which is similar in form to the ordinary rail, the difference being that one side is channeled deeper than the other, and the channel is beveled to receive a re-enforcing bar, which is also channeled and breaks joints with the rail proper so that the whole is as rigid at the joints as elsewhere. A little space is left between the vertical adjoining faces of the two parts of the rail to admit of a perfect bearing at the upper and lower edges of the inserted piece, and there is a small semicircular groove at the juncture of the base and web to relieve the sharpness of the angle.

This improvement is the invention of Dr. A. C. Vaughan, of Shane's Crossing, Ohio. The foreign patents are to be issued jointly to the inventor and Mr. Francis Jordan, of Harrisburg, Pa., who is general agent for the introduction of the invention.



DWEES' WINDMILL.

The Kuro-Si-wo not like the Gulf Stream.

According to the recent report of W. H. Dall, Acting Assistant of the U. S. Coast Survey on the Pacific coast, the Kuro-Si-wo, or Japanese warm current, is not marked in its approach to the American coast by sharply defined walls of water temperature such as characterize the Gulf Stream of the Atlantic. It is not at all like a river flowing in its bed. There is a general drift which is reversible and intermittent when opposed by storms, and which shades off from a temperature of 65°. That part of the Kuro-Si-wo having a temperature of 55° approaches the northwest coast in the vicinity of Vancouver Island. There is a deflected arm of this current known as the Alaska current, which has a temperature varying from 50° to 55°. The shoal waters of the Behring Straits on the eastern side appear to be warmer than on the western side. But Captain Dall says that there is no proof that there is a warm current flowing up through the straits. The whole Pacific coast, however, from Unmak in Alaska, to Vancouver is bathed by a sea with a summer temperature varying from 48° to 55°.

The winter along a coast of this temperature never can be severe. There is a great precipitation of moisture, but only a moderate degree of cold until the interior of the country is reached. Southeastern Alaska has been described by recent explorers as having more than a tolerable climate. For a considerable part of the year it is pleasant and altogether agreeable. It is essentially that of Vancouver. The exhalations of moist air are drifted inland. Vegetation is rank, and a great deal of the land can be made very productive. It is not to be supposed that the influence of the Kuro-Si-wo is lost after passing Vancouver in a southerly direction. It no doubt has some influence all along the Oregon coast, and greatly aids in the precipitation of moisture in Washington Territory and Northern Oregon, and in producing the fogs of the California coast.

MECHANICAL INVENTIONS.

An improved nut lock, patented by Messrs. Amandes Hackman and George W. Tinsley, of Blakesburg, Iowa, consists of a bolt having a longitudinal groove cut across its screw threads, in combination with a nut having a thin raised annular collar or flange, that fits about the bolt and may be pressed into the groove of the bolt for the purpose of locking.

A baling press so constructed that the head block can be moved to one side to uncover the top of the baling box, and that the direction of motion of the follower can be changed while the driving shaft moves continuously in the same direction, has been patented by Mr. Alexander McN. Paxton, of Vicksburg, Miss.

Mr. Henri Burin, of New York city, has invented a tool for cutting off metal rods, bars, or shafts, and also for cutting screw threads, and especially intended for heavy work. The inventor makes use of a cutter head fitted for being revolved by a hand crank and gearing on a base or support that is to be clamped around the bar or shaft. The cutting tool travels around the shaft or rod, and is set up by a screw as the work progresses.

A novel and efficient rock drill, wherein the drill is fed and turned automatically, and is operated in delivering a blow by the full force of the propelling power, has been patented by Mr. Arthur W. White, of Buffalo, N. Y.

Mr. Kimp Hill Higginbotham, of Waterford, Miss., has patented a water wheel, so constructed that it can be run with a very low head of water, and can be stopped and started automatically.

Mr. Joseph V. Morton, of Winchester, Ky., has patented a sewing machine motor, so constructed that sewing machines may be driven by hand power or by foot power, or by both hand power and foot power, as desired.

Signaling by Illuminated Steam.

A new method of signaling at sea has lately been tested in England by the Trinity Board, with great promise of beneficial results. The system was devised by Carl Otto Ramstedt, late of the Russian navy. The apparatus consists of a dished chamber, in which the inventor burns strontium or other substances so as to produce a variety of colors if desired. At the back of the chamber is a reflector, by means of which the light is thrown on the steam either steadily or in flashes at will. The steam thus becomes a luminous mass, varying in color with the substances used in combustion. In practice the light is thrown upon the steam issuing from the funnel of a steamer, and optical signals are made according to any known code of signaling, such as by combinations of flashes of longer or shorter duration. This is effected by the light apparatus being closed in at the front with a hinged cover, which is manipulated by the signaler according to arrangement. The result of the experiments showed the system to be very effective and applicable to its intended purpose, and there appears to be little doubt that it will prove of value as a means of signaling at sea.

The advantages of the invention are not limited to steamers, as it is equally applicable to sailing vessels, in which the light might be thrown upon the sails.