NEW INVENTIONS.

To Prevent Incrustations on Boilers.

John Garst, of Dayton, Ohio, has taken measures to secure a patent for a useful improvement for preventing incrustations in boilers. The nature of this improvement consists in the employment of an oblong box of suitable length and width placed above a long partitioned trough, and in such a relation to the steam engine as to allow the steam passage of the upper box being connected with the exhaust steam pipe of the steam engine into which the steam escapes, and into which the cold supply water is also admitted. The water from thence flows down into the trough below, which is so partitioned that it flows through shavings, or other substances from one chamber to the other through the series, and is taken away from the last one by the pump to supply the boiler. The water so treated is filtered from calcareous substances which adhere to the inside of boilers and form incrustations. In places where hard water is employed for steam boilers we consider this improvement of great value, for there is no doubt but when the water is heated to a certain degree by the steam, and then suffered to spread over minute surfaces like shavings or brushwood, and become cool, but the limous matters separate from the water and adhere to the minute surfaces. This improvement has been tested with the very best results.

Clamp for Rigging Vessels.

John F. Ward, of Hartford, Conn., has invented a very neat and useful clamp to be used in rigging vessels. The clamp is formed with two parallel jaws, one of which is attached permanently to the end of a screw rod, the other jaw works loosely on the screw rod, and is prevented from turning upon it by a feather in a groove. The movable jaw is screwed or pressed towards the stationary jaw by a nut on a screw. This instrument is to be used for bending the loops of ropes together preparatory to seizing or binding them with yarn. This improvement will be found of great benefit to riggers, and we have no doubt but it will soon be in general use. Measures have been taken to secure a patent.

New Potato Digger.

T. B. Stout, of Keyport, N. J., has taken measures to secure a patent for a new machine to dig potatoes, which consists in the employment of a cylinder having teeth upon its periphery, so arranged as to take out the potatoes from the hills; in connection with said cylinder are a revolving beater and a forked cutter, by which the potato vines are cut off before the cylinder, to allow the teeth of the cylinder to operate freely and effect their work thoroughly.

Carriage Springs.

John M. Perkins, of this city, has taken measures to secure a patent for a new and useful improvement in springs for carriages and other vehicles. The nature of the improvement consists in a peculiar arrangement and combination of the elliptic and spiral springs with diagonal rods and nuts by which arrangement and combination the elasticity of the springs may be graduated according to the weight put upon them; much of what is termed "the running gear" is dispensed with by this improvement, and carriages can therefore be made more light and economical.

Fan Bedsteads.

William Monds, of Macon, Ga., has taken measures to secure a patent for an improved fan bedstead. A fan is hung on a vibrating rod passing through arms attached to the head posts, which by appropriate gearing of cords and pulley is attached to the slats on which the bed is placed, and on which, when a person throws himself to luxuriate in repose, his weight sets the machinery in motion to keep the fan vibrating all night long. For warm climates it will be the grand ideal of nocturnal happiness.

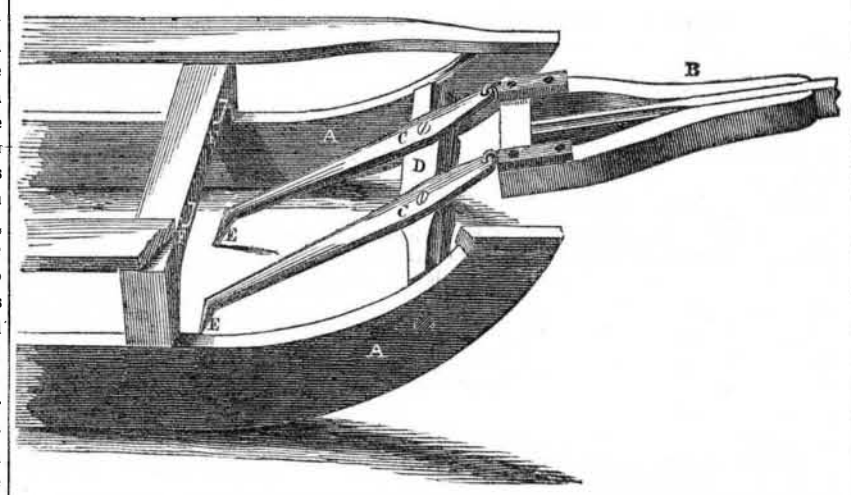
Board or Plank Roofs.

Samuel Taylor, of Petersham, Worcester Co., Mass., has taken measures to secure a patent for an improvement in board or plank roofs. The roof is formed of two layers of boards, the joints of said layers being covered. In the under layer there are grooves or channels directly underneath the joints of the upper layer, which channels convey all the water that may pass through the upper joints into the eaves through a gutter.

Tanners in the United States.

There are 6,263 tanneries in the United States, with an invested capital of $18,900,557, and which produce tanned hides and skins yearly valued at $32,861,796. The number of hides tanned is 6,128,970, skins, 2,653,865. The number of hands employed is 20,909 males and 102 females.

PATENT HOLD-BACK FOR SLEDS.

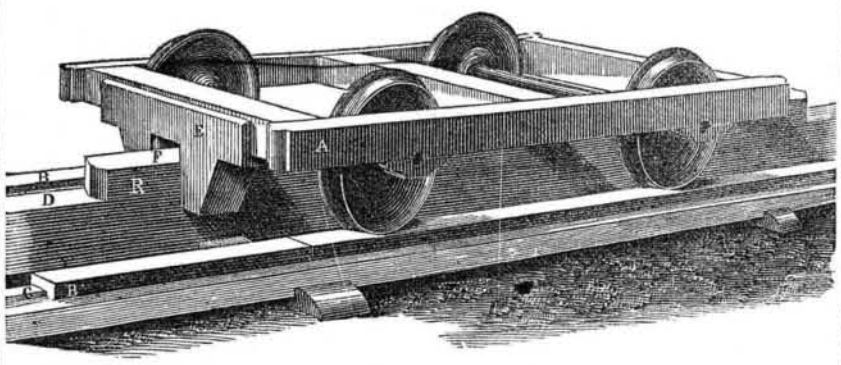


The accompanying engraving is a perspective view of an improved Hold-back for sleds, invented by Perry Dickson, of Blooming Valley, Crawford Co., Pa, and for which a patent was granted on the 27th of last April,—the claim will be found on page 270, this Volume Scientific American. The improvement relates to attaching the hold-backs rigidly to the roller, and connecting the tongue—the inner end of the pole—to the hold-back, or to the roller, by hinge joints, in such a manner that the stoppage or backing of the draught animals, will turn the roller partially over on its bearings, in the runners, and drive the dogs of the hold-backs into the ice, snow, or frozen ground; on the other hand, the draught forward will raise them; they are, therefore, of great importance in going up steep acclivities during the winter season.

A A represent the runners of the sled; B is the pole commonly called the tongue, and the back parts of it are named the "hounds;" D is the roller; it is inserted in the runners at the curved parts, and turns in bearings or holes made in them: it is the axis of the sled. C C are two stakes having metal pointed projecting ends or dogs, E E; these are the hold-backs; they are bolted on to the upper surface of the roller, D, and are attached by joints or swivel hinges to the hounds of the tongue, B. The hold-backs extend under the bridge or front cross-brace, F F, of the sled, which has a hollow part cut below for each stake, to allow it to rise up nearly to the top surface, but to be kept down by a projection of wood or metal, in the front part of the bridge; this is to allow the hold-backs to rise up and be on a horizontal line with the roller when the animals are drawing. When the draught animals stop, the least backing up gives the roller, D, a roll backwards and over in its bearings; this action throws the stakes, C C, downwards, and the sharp prongs or dogs, E E, are forced into the ice, snow, or ground, and assume such an angular position to that of the tongue, as to form a rest and hold-back to the animals which are employed to draw the sled; the draught forward easily lifts the prongs out of the ice, &c., and relieves the hold-back. The invention is a very simple and useful one; it can be easily applied for a very small amount of extra cost.

More information may be obtained by letter addressed to the patentee.

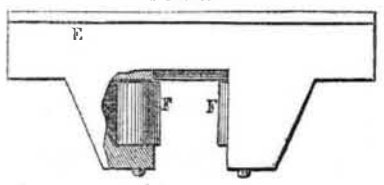
CARPENTER'S SAFETY RAILROAD.---Fig. 1.



The annexed engravings are views of an invention for preventing locomotives and cars running off the track, also to improve the rails, in a very simple manner. The inventor is H. Carpenter, of Rome, Oneida Co., N. Y., who has taken measures to secure a patent for the same.

Figure 1 is a perspective view of truck and track, constructed according to the improved plan; figure 2 is a transverse section of the

Fig. 2.



truck bridge, with part of the wood broken away to show the anti-friction side rollers. The same letters refer to like parts on all the figures. As the improvement is very simple, it will not require many words to render it perfectly intelligible to every person. First, let us explain the new rails: C is a rail made with a metal top and side flanges, B, (one not seen), the inside is filled with wood. This rail is keyed down on the sills in any proper manner, and projects like any other rail. A is the truck; it is made in the usual way, except the cross braces, or bridges, E, a correct idea of which will be obtained by figure 1, as connected with the truck, and fig. 2, as to construction; R is an elevated central guide rail. F F are two anti-friction and guide rollers, set on spindles in the cheeks of each bridge, E, in a truck; it will be observed that the truck spans the elevated central rail, while the weight of the engine or car is thrown upon the lower rails, B B; any obstruction, therefore, which would throw the wheels off the ordinary track, cannot throw them off this one; the elevated rail will prevent such accidents completely. The side rollers, F F, along with the rail, give the cars a smoothness and steadiness of motion, which is altogether unknown upon any of our roads at present. The side pressure being thrown upon the central rail, will greatly reduce the friction, and at the same time prevent the wearing and splitting off of the flanges of the wheels, and thus affect an important saving in this respect; a transverse roller may be set upon F, in the roof of the bridge, E. It makes no matter how high the velocity of the train may be, if a wheel or axle should break, the central guide rail will support and keep up the disabled car until the whole train can be stopped. The central rail is secured on the cross-ties, and tends to strengthen the whole track, and obviate that jerking, shaking motion now so sensibly felt in turning curves. Mr. Carpenter claims that his light wood filled rail, with his elevated rail, will answer just as well as the heavy T rail on the common tracks, and will save $3,000 per mile; the vertical flanges, B, render this rail strong, for it is in the form of a rectangular tube, and is therefore much stronger than the old flat rail. The lower part, D, fig. 1, is merely to show the crossing; but we hope the time is not far distant when no roadway crossings will be allowed on any railroad, and when all the tracks will be fenced in and well guarded, and when it will be as safe to run at the rate of 80 miles per hour, as it would be now to run at the rate of 10 miles in that time. We are not at the end of improvements on railroads, by a long distance. We may yet see double tracks between our populous cities, straight as the path of an arrow, eight and ten feet wide, with huge cars running at the rate of one hundred miles per hour with perfect safety. The plans of Mr. Carpenter deserve the attention of all our railroad companies and engineers; his central rail can be sawn out at the mill, and the extra expense, according to the contemplated advantages, should not weigh much in the scale of opposition to its adoption.

More information may be obtained by letter addressed to Mr. Carpenter, who has taken measures to obtain a patent.

Galvanic Battery for Doctors.

Louis Drescher, of this city, has taken measures to secure a patent for a new galvanic battery, of a peculiar character and form, to be used by doctors as a substitute for blisters, and for the removal of toothache and other pains. The galvanic battery or pile consists of several pairs of small electric generators, each pair being made with the negative plate of copper or platina, gauze, and the negative of zinc gauze, or perforated plate. Each pair is separated by a disc of some substance which will retain moisture for some time, and are not united by a metal conductor, but each pair is connected to the next by a fine metal conductor, to carry the full current of electricity generated from one pair to the other, through the entire series of plates in the pile. Every pair is a battery of itself, and their diameter is about two inches. They are bound together by wires, and are dipped in weak acid, or salt water, to moisten the cloth between each pair, and then set upon a table. The secondary current, which flows in a set of plates placed all together in a fluid connection, is obviated; the plates present an extensive surface, and a current of great intensity is generated in a very small pile. This battery only occupies the space of a few inches, and can be carried about in a gentleman's coat pocket. To apply it for the raising of a blister, the two poles are connected with handles which have metal buttons on their ends, the patient takes the negative handle in the one hand, and places the positive button on the spot to be operated, and retains it in close contact for about five or ten minutes, when the blister will be formed. It can thus be applied in a very superior manner, to raise blisters of any size, according to the size of the buttons applied. It has cured toothache by being applied to the root of a tooth on the gum. It has cured stitches and rheumatic pains, and it may be applied to relieve many other ailments. Its action is first that of a gentle thrilling warmth, then, according to the time it is kept in action, it becomes more acute to the feelings until it is time to be removed. It is a new and wonderful application of electricity for medical purposes.

Erratum---Ingham's Water Wheel.

In giving the residence of Mr. Ingham last week, after describing his water wheel, it stated "West street," it should have been "West 13th street."