

**NEW INVENTIONS.**

**Improved Spike Machine.**

Measures to secure a patent for an improved Spike Machine, have been taken by John R. Richardson, James Westerman, and Ebenezer Wilder, of North Castle, Pennsylvania. In this machine the inventors employ an original mode of forming the point of the spike, which they accomplish by means of rollers attached to slides, and working on adjustable beds, so that by placing the beds in a more or less oblique relation to the spike, a shorter or longer point is given to the latter by the pressure of the roller. To relieve the ends of the jaws from the pressure of the spike head, so that they can separate freely, it is proposed to give the header a return motion before the jaws are parted. There is also an efficient plan for holding the rod which forms the spike material whilst the requisite length is being cut off. The working parts of the machine are all moved by a shaft carrying five cams, so placed as to properly time the several operations of cutting, heading, and pointing. The initial process is to pass a rod of iron through a loop, and upon an under die, whilst a gauge regulates the length, when a knife cuts off the piece. The holder and under die securely holding it in the meanwhile. The piece of iron is then pressed between the two jaws and the upper die, which is intended to press upon the spike, and directly over the rollers which are now advanced until they come nearly or quite in contact. The header is moved instantaneously with the roller carriages until, having executed its duty, it recedes a little, and the spike being now completed is allowed to escape.

**Corn Grinding Mill.**

A mill of an improved description, for both grinding and shelling corn by one operation, has been invented by Wm. Zimmerman, of Quincy, Ill. In this improved arrangement the mill is made to consist of a revolving and stationary grinder, over which latter is placed a hopper connected with the revolving grinder, by two uprights, and made to revolve in a similar manner. The hopper is furnished with several openings, through which, as it rotates, the ears of corn are made to fall on the stationary grinder, where the shelling operation is performed. For this purpose the stationary grinder is provided with slots, into which a series of teeth, belonging to the revolving grinder, are made to fit so that the edges of the slots act against the corn as the revolving grinder turns round. After being released from the cob the grain falls through shelling holes at the lower part of the stationary grinder, and is ground into meal between the two grinders, which are for this purpose corrugated on their appropriate sides. The cobs, by adjusting the hopper sufficiently close to the stationary grinder, may also be ground between the two, if desired, but in this case the under side of the hopper must be likewise corrugated. The spindle that forms the shaft for the lower grinder is made hollow for facility of lubricating the step.

**Improved Cider Mill.**

A Cider Mill of an improved construction has been invented by John M. Hanford, of Howell's Depot, N. Y., who has taken measures to secure a patent. In this machine the cider mill is made with two screws and rollers, one on each end, and having a crushing or grinding apparatus in the centre, under which is placed the pomace receiver. This latter is slatted for allowing the juice to run through during the process of extracting it by the screw, and is divided into two compartments, which are separate although connected together, so that, in fact, there are two receivers. It is in this latter circumstance that the principal merit of the invention consists, for, by this arrangement, there is always kept up a continuous supply for the crushing apparatus, as either receiver is always in the centre underneath, and according as the operation is performed, is drawn off to the right or left under its proper screw, where the juice is squeezed out and the refuse discharged, after which the receiver is drawn back again to the crusher, and the other receiver forced under its proper screw, and thus the operation is carried on alternately with each. The ma-

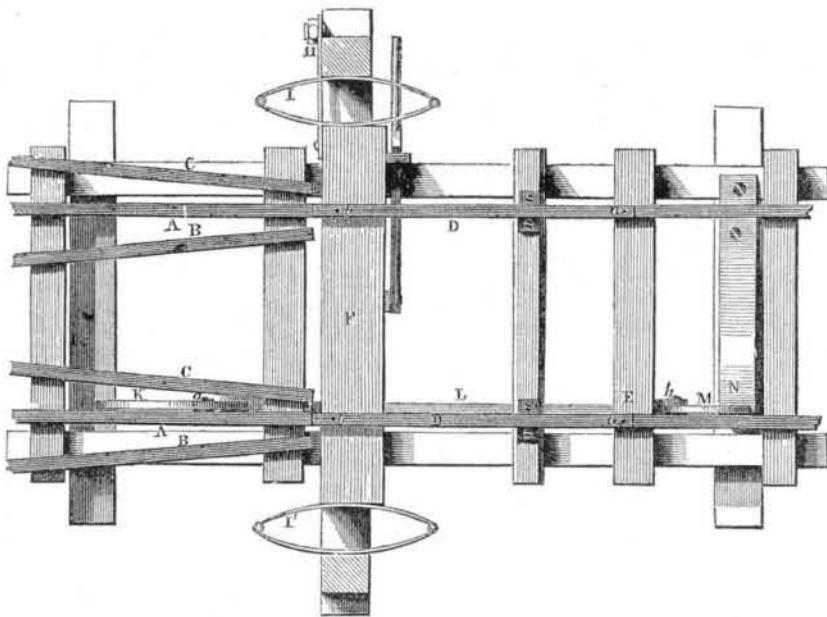
chine is fixed between two upright posts upon a platform, to which wheels are attached, so that it can be moved about, and is furnished with stops for regulating the distance, that the receivers are to be moved back and forth.

**Another Improved Car Seat.**

Measures to secure a patent for the above have been taken by William M. Warren, of Watertown, Conn. This improvement for rendering railway travelling more pleasant gives the passenger an option as to the inclination of the seat, places the foot-board entirely under his control, and, in addition to a revolving back, which can be turned over

so as to face either way, allows him likewise an adjustable one, so that a high or low backed seat can be had at pleasure. The seat is suspended upon pivots and shifted as desired, by means of a lever catching into recesses in a sector, so that it cannot move unless at the will of the occupant. The adjustable back is so connected to the other by jointed levers that it can be made available whichever way the passenger may face. The foot-boards are placed upon beds, so that they can be moved and retained beneath the seat when not wanted, catches holding them in their place, and when in use they can be regulated to any height or for any required position.

**IMPROVED RAILROAD SWITCH---Fig. 1.**



The annexed engravings are views of an improved railroad switch, invented by James M. Dick, of Buffalo, N. Y., who has taken measures to secure a patent for the same.

Figure 1 is a plan or top view of the improved switch; figure 2 is a longitudinal vertical section of the same; figure 3 is a transverse vertical section; figure 4 is also a transverse vertical section. Similar letters refer to like parts.

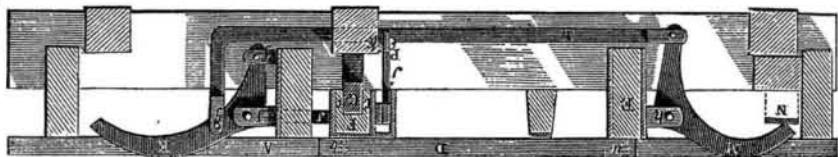
The nature of the invention consists in the employment of springs and levers so arranged and adjusted to the switch, that the car wheels, as they pass, will operate upon the levers above mentioned, release the switch, and allow the springs to throw it in a line

with the direct track. The switch is set in line with a branch track by an attendant, and the cars after passing from the branch track upon the direct track operate upon the levers, and produce the result mentioned.

A represents the rails of a direct track; B and C represent the rails of branch tracks, and D are the short movable rails which connect with either of the above tracks.

The movable rails are connected at one end by pivots, a to the sleeper, E, and in line with the direct track, A, the opposite ends of the movable rails are connected by pivots, b, to the slide or movable sleeper, F. The slide or movable sleeper, F, rests upon a cross piece, G, and flanches or projections, c, attach-

**Figure 2.**

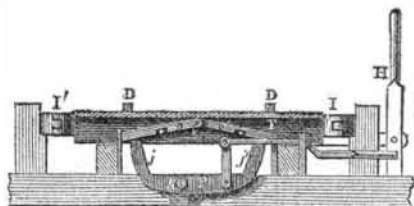


ed to the slide, pass down on each side the cross piece, as seen in figure 2; these flanches keep the slide properly on the cross piece: H, figures 1 and 4, is a lever by which the slide, F, is moved, and the movable rails, D, put in line with either of the branch tracks, B C; I I' are elliptic springs, one placed at each end of the slide, and J is a stop attached to the lever, K, which lever, K, has its fulcrum at f, and is attached by a pivot, g, to the connecting bar, L, and the connecting bar, L, is attached to a lever, M, having its fulcrum at h, and similar to the lever, K. Both levers, K M, project

up a short distance above the rails. There are two recesses, d e, (see figure 4) in the slide, F, in which the stop, J, fits. When the stop, J, is in the recess, d, the short movable rails, D, are in line with the branch rails, B, and when the stop is in the recess, e, the short movable rails are in line with the branch rails, C, figure 1. The stop, J, is forced into the recesses by the spring, N, which acts upon the lever, M, figures 1 and 2.

O O' are guards attached by a pivot, i, to one side of the slide, F, and P, is a lever having two vertical pins or projections, j j', upon it.

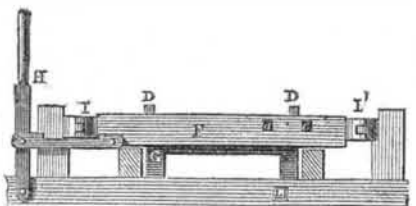
**Figure 3**



The lever, P, has its fulcrum at k, by raising or depressing the end of the lever, P, the pins, j j', will act upon the guards and elevate them, so that the slide, F, may be moved.—The guards prevent the slide from being moved accidentally.

**OPERATION.**—Suppose that the short movable rails, D, are in line with the direct track,

**Figure 4.**



A, and it is desired to move them in line with the branch track, B. The end of the lever, P, is depressed by an attendant, and the pin, j', throws up the guard, O', and by drawing outward the top of the lever, H, the slide, F, is moved along until the stop, J, is thrown into the recess, d, by the spring, N, while in this position the movable rails, D, are in line

with the direct rails, A, and branch rails, B, and secured in that position by the stop, J. Now, when a train of cars passes from the branch track, B, upon the direct track, A, the car wheels will depress the lever, M, and the stop, J, will consequently be withdrawn from the recess, d, and the elliptic spring, I, which was compressed when the slide, F, was moved, will, by expanding, throw the slide, F, back to its original position, and the movable rails, D, will be again in line with the direct track, A. The same operation is performed when the movable rails are in line with the branch rails, C, only the slide, F, is moved in an opposite direction, and the stop, J, fits in the recess, e. In case the movable rails, D, are set in line with either of the branch tracks, and the train is passing along on the direct track in either direction, the movable rails will be brought in line with the direct track as soon as the wheels depress either of the levers, K M.

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

**Hot-Air Furnace.**

An improved apparatus of the above description has been invented by M. B. Dyott, of Philadelphia, Pa., who has taken measures to secure a patent. The object aimed at in the improvements, is to obtain as much caloric as possible from the furnace, or, in other words, to heat the greatest quantity of cold air, and to obtain the largest amount of heat from it. This purpose is effected by placing a cylindrical flue inside the fire chamber, so that a large radiating surface is exposed, up which the cold air passes, and by fixing outside the same air chambers or drums, through which the hot air from the fire chamber circulates by means of tubes, and which communicate with one another by a similar method. These air chambers or drums are so arranged as to allow a current of cold air to act upon the outer surface of the fire chamber, both for the purpose of heating the air and also of preventing the fire chamber from being injured by the action of the fire. The arrangements for the admission of the cold air, and for the circulation of the hot air are very simple and complete.

**Stone Dressing Machine.**

Measures to secure a patent for improvements in the above have been taken by E. G. Hastings of New York City. The improvements consist in the employment of a cutter slider, which carries the necessary chipping tools, and works in an inclined slide, which is adjustable at different inclinations by means of screws, that serve to raise or lower either cross piece of which it is composed. The slider is raised up to a suitable height by a cam on a rotary shaft, and is made to descend with a quick jerk by a spring or weight, the depth of the cut being regulated by the above-mentioned screws. The stone is placed on a table which slides on a stationary bed below the cutter slider, and the table has a regular feed motion communicated to it between every two blows of the cutters. These latter must be of suitable width or in sufficient number to cut across the entire surface of the stone at every blow, which is given by the descent of the slider; if requisite, the spring for aiding its descent may be dispensed with, and the slider may be caused to fall and strike by its own weight.

**Another Specimen Letter.**

DEAR SIR.—Whi cant I fly if I make the wings like a birds and work them like a bird. I dont want you to refer me to Mr. Wise, as I dont go by gass, I want your opinion.

S. H.

Feb. 14th, 1853.

[There is no reason, dear sir, why you can't fly, if you make your wings large enough, and get on the top of a house, you can fly down to the ground much easier than you ascended to the roof of the building. We do not advise you to try the experiment, however.

A company is being formed in Fall River, with a capital of \$100,000 for the purpose of manufacturing locomotives.

A new custom-house at Bangor, Me., is to be built of granite at a cost of \$41,000.