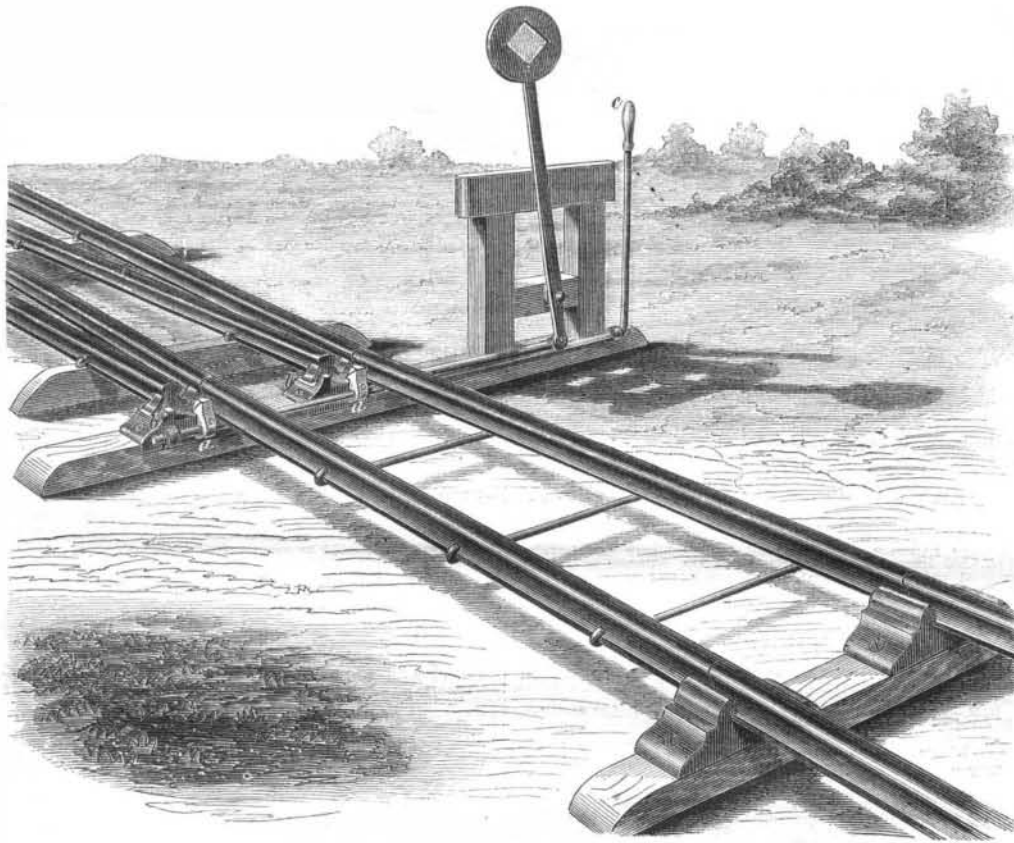


Improved Railroad Switch.

Many valuable lives and large amounts of property are constantly being destroyed on railroads by having the tracks so misplaced at the switches that the trains are thrown off. These accidents occur through many causes, not the least of which is the negligence of the watchman or switch-tender to bring the rails in the proper place. The device which we here illustrate, is intended to prevent accidents of this kind, as the engineer can see at a long distance whether the tracks are in a continuous line, or whether they only approach correctness; he can then stop his train in time to avoid accident. The invention consists in disposing a pair of dogs, *a*, fixed upon a horizontal shaft in connection with the side of the rail, so that they confine the latter as immovably between two

large shops hacking away with a hammer and chisel on work that they could do better and more profitably to themselves and their employers in a lathe or planer. A slotting machine is one of the most useful tools in a shop; a compound planer is also a good tool, and the busy, quick-stroke, shaping machines can do more work, of a better class, than all the flat or cape chisels in the country. It looks out of place and behind the times to see a man with a rock-shaft arm or a connecting rod in the vice, chipping, slowly and carefully, portions that might be cut off in a twinkling by the proper tools. There are not enough slotting machines in use, and of the lighter tools there are also too few. We should like to see all work done by machinery, that can be advantageously done; and then the workman could take his

materially. "Man shall earn his bread by the sweat of his brow," and he does; invention is the sorest toil; they who consume the midnight oil know this; they who, tortured on the rack of thought, turn restlessly and uneasily in the night, big with the inspiration of some new and valuable machine or process, they know this; all men who have ever given time, toil, and patient reflection to the details of some new tool, will acknowledge the truth of the statement that invention is sore toil. Therefore let us honor our inventors, and stimulate them to still greater efforts. Let us not be wanting in our appreciation of the exertions they are making to improve themselves, and develop the best interests of the country, but show our gratitude by employing new machinery wherever it can be profitably introduced.

**MARSHALL'S PATENT RAILROAD SWITCH.**

iron jaws as if they were in a vice. There are two stops, *b b*, on the chair in which the ends of the switch rails work, which stops limit the motion of the rails and prevent them from being thrown over too far. When the track is to be shifted for the passage of a train, the small handle, *c*, is thrown down horizontally, this releases the toes from their hold and the rails may then be thrown over by the ordinary brake; when the train has passed, the handle is raised and the toes bind on the opposite side of the rails and bring them in direct line with the main track. It will be evident to the reader that, if the vertical handle is not in the position shown in the engraving, the switch is not safe, as the track is liable to be deranged by passing trains; and it is valuable in this, that the persons in charge can see at a glance, even from a distance, the condition of the line. This switch has been in use for the past year on one of the New England roads and has given great satisfaction; it is the invention of Mr. Oliver W. Marshall, of Windsor Locks, Conn., and was patented on June 18, 1861; further information respecting it can be had by addressing the patentee at that place.

MACHINERY versus MUSCLE.

Which is the best—machinery or manual labor? If tools are of any benefit to manufacturers, particularly of machinery, why not use them instead of occupying twice the necessary time in removing superfluous metal with a hammer and chisel or a file? There are but few processes at the present time that cannot be performed by tools, either ordinary or those designed for some special purpose. These remarks are stimulated by seeing men in some of our

proper place and oversee the "slave" that saves him unnecessary toil and labor.

There is by far too much pulling and hauling by muscle where machinery would do the business quicker and better. It was thought to be a terrible innovation on established customs when portable engines came into use for hoisting out; or stowing in, ships' cargoes. The loud cry of the stevedore's gang is hushed—the call of the 'longshoremen, summoning their mates away to labor, is heard no more; a little portable engine, standing in six square feet, contains all the muscle and will of five hundred workmen, and, obedient to the signal, runs away with the heavy bales and boxes, and snatches them up aloft as though they were so many feathers. This is just what we desire to see. In the present age we have the apotheosis of machinery—science active, eager and vigilant to advance the best interests of mankind. Muscle is down, and brain power is up. Weighed in the balance, main strength and stupidity must always kick the beam, opposed to patient and laborious thought.

Let us have more useful machinery. In every situation of life, we see openings that demand the substitution of improved methods for obsolete ones. The work of housekeeping alone has been lightened a hundred fold by the ingenuity of our inventors; and our readers have only to reflect, and they will see for themselves that this assertion is true. Keep on in the good work; it will not invalidate manual labor, where it is wanted, but will enhance its worth. There will not be so many hewers of wood and drawers of water; but there will be more, and a better class, of intelligent, thoughtful men, who, by seeking out causes and effects, increase the value of their own labor, and advance the interests of the world

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