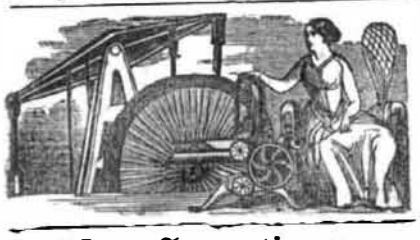


New Inventions.

The Topographer.

Mr. J. M. Steed, of Parkersburg, Va., has invented an instrument named a topographer, for measuring heights and distances in a manner very different from the odometer or any other instrument. The whole apparatus except two levers are enclosed in a box and buckled to the front of the body. The two levers extended from the ankles to the waist and act upon two sets of wheels, one set to ascertain horizontal distances and the other two ascertain ascents and descents by regestering particular marks by a pencil on a strip of paper wound round a small roller.

The weight of the whole apparatus including the case will be about 3 or 4 pounds and a person having one on, by walking over the route of any proposed road, canal &c., the amount of excavating, and filling up to obtain any required grade is shown by a profile, and dial on the end of the registering roller. It indicates at any point the distance from the surface to a level with the starting point upon the ground passed over. It is designed to enable engineers to dispense with the use of chains, &c. and thus avoid considerable expense, and the inventor and many others, believe that a single person by it will be able to accomplish as much surveying, locating and grading of Roads, &c. in one day, as can be done by a corps of engineers, and what is more important, the operator does not require much skill or practice, he has but little to do but note the magnetic courses of the lines—the residue being regestered by the instrument.

Measures have been taken to secure a patent

Improvement in Lumber Wagons.

Mr. David W. Seeley, of Carlisle, Schoharie Co. this State, has recently invented a valuable improvement for connecting the fore axle and wheels to the bolster or body of a wagon in a firm and substantial manner, and dispensing with the use of the old fashioned hounds, block-tongue, sway-bars and sand-board; and doing away with the necessity of boring the bolster and axle for the king bolt. This improvement consists in the employment of two metallic circular plates, the one bolted to the axle and the other to the bolster and perch, and these firmly connected by a cast iron bolt so peculiarly constructed as to make it impossible to separate the fore axle from the bolster without first removing one of the fore wheels and placing the axle in a position at right angles with its working position, which it will be seen brings one arm of the axle directly under the perch.

New Reciprocating Paddles.

Mr. Jacob Ruxer, of Somers, N. Y. has invented a new plan of operating paddles, so as to give them a reciprocating motion, lifting them vertically out of the water when they have made the full stroke and moving them forward horizontally, to dip again into the water. He does not use a crank, but guides the paddles by an inclined plane, the paddles being firmly secured to a long lever.

Antifriction Roller Box.

Some of our Boston exchanges say that Mr. Joseph Harris of Boston, has invented and patented a box and axle which require no oil, and yet almost completely escapes that destroying angel of machinery, friction. They state that "Mr. Harris put his axle box in a lathe and turned 1000 revolutions in a minute, a motion which, with a common sized railroad truck-wheel, would carry it about two miles a minute, or 120 miles an hour, without producing any perceptible heat, and without the use of a particle of oil. The mechanism by which a result so desirable and astonishing is effected, is somewhat after the manner of that discovered by the prophet Ezekiel in his vision, "a wheel in the middle of a wheel," or rather, six wheels in the middle of one. The box is about five inches in diameter, and the axle three inches, and in the space between them are disposed at equal distances, six anti-friction rollers, which are kept in their places by teeth at both their ends, playing in corresponding circles of teeth in both the box and axle. There is no bearing upon these teeth, which are cut to the anti-friction curve. The bearing is entirely upon the smooth portion of the rollers between the teeth.—The only service of the teeth is to prevent the possibility of the rollers getting out of place."

There may be something about this anti-friction roller box which is not made public, but the description we have seen, conveys no other idea of its *novelty* except in stating it to *be new.*

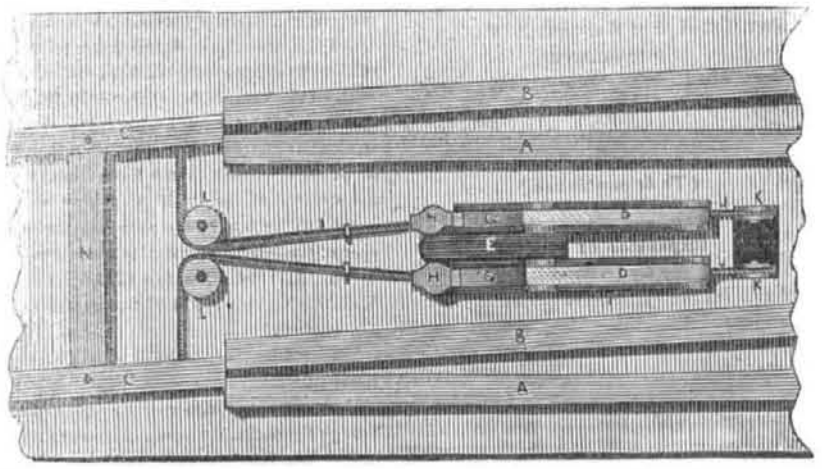
Improvement in Striking Bells.

Mr. T. Reeves of this city, has made an improvement in ringing bells, by mounting the bell so as to be moved by a ratchet and allowing the hammer to strike 240 times on the circumference of the bell—a new spot every stroke. This is a good improvement for striking large bells; heretofore they have been struck always on one spot, which was the cause of many fractures in ponderous fire bells.

New Perpetual Motion.

The perpetual motion which we noticed some time ago, as having been invented in Madison, Ga. by a Mr. Ricter, is described by the Augusta Sentinel to be "a wheel, about 6 inches in diameter, which sets itself in motion and runs with increased velocity, until stopped by the application of external power."—

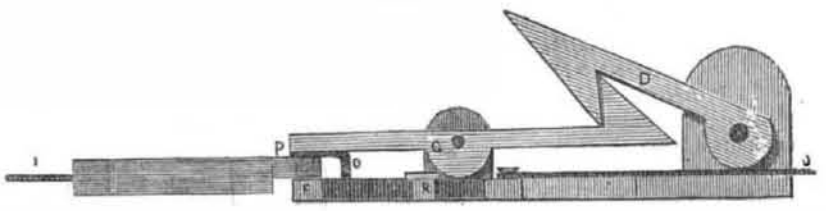
NEW RAILROAD SWITCH.---Figure 1.



This Switch is the invention of William C. Hicks, of Rutland, Vermont. Its object is to shift the rail or rails by the locomotive, so as the change of the track will be effected without any attention of the switchman before the locomotive comes up the line on which the train has to run.

Fig 1, is a horizontal ground plan, and fig. 2, a side view. The same letters indicate like parts on both figures. A, are the rails of the turn out. B, are the rails of the main track, and C, are the switch rails. D, are notched levers of the form seen in fig 2, moving on fulcrums and secured permanently between the tracks at some distance from the switch rails. E, is an oblong plank secured firmly in front and between D D. F, are planks arranged at the sides with slots in them through which pass permanent bolts secured underneath for F to slide on and be guided. G, is an under notched lever which vibrates on a centre, and D catches into it, as seen in fig 2.—The chain blocks H H, are attached to G G, by a bolt as seen in the dotted lines fig. 2, and the chains I, pass around horizontal pulleys L L, and are secured to C C, the switch rails.

Figure 2.



I I, are other chains attached to G G, fig. 1, and passing under D D, over pulleys K K, down into a pit below and have weights hung on their ends. O, is a bent wire inserted in the surface of F, the slotted sliding blocks and are hooked over the ends of H H, so that when the sliding blocks F F, are drawn forward, H will be held down, but it drawn back H will be set free from the bolt which couples it to G, at P, fig. 2.

Operation.—Supposing the track to be set as in fig. 1, and the locomotive to be approach the switch rails C C, on the track B B, there is a cam on the lower part of the locomotive which would strike D on the right hand side and force the notched end downwards, depressing the notched end of G at the same time causing its other end at P, fig. 2, to rise and the bolt be raised out of the eye of H, and the right hand chain I, set free from the weight below on the rope J, when the weight on I on the left hand will pull the switch rails over to the right, there being no equilibrium weight on that side to be a balance against its operation, and thus shift the switch rails before the locomotive comes up. Mr. Hicks has made application to have his Switch secured by letters patent.

Cast Iron Leg.

The Philadelphia Ledger states, that one of the most perfect artificial legs that has ever been constructed, is one made mostly of cast iron, invented by Mr. G. W. Yeager, South Third st. Philadelphia, for Mr. J. P. Smith of the United States Engineers who lost his limb in the battle of Cherubusco. The artificial leg only weighs 2 pounds 11 ounces, and it is so perfect that the knee and the ankle motions belonging to the natural leg and foot can all be performed with nearly as much facility as the manufactured one. The springs allow the natural play of the foot, and the leg instead of hanging back in walking, as we see frequently in the wooden legs, comes properly forward, obedient to the will of the wearer. It is allowed by skillful surgeons in Philadelphia, to whom it has been submitted for inspection, to be the best one of the kind that has ever been made. This is saying a great deal for the invention.

Manufacture of Coke for Iron.

The most important operation in the manufacture of iron, is preparing fuel for the furnaces, a work of the greatest importance, as upon it depends the quality of iron produced.

The best fuel is charcoal, which is consumed in the Swedish furnaces, in Russia, and in many parts of America, and was formerly employed in England, until the vast increase of the manufacture rendered the employment of such a substance impossible. Even in the time of Elizabeth, the great consumption of wood in the iron works induced the Parliament to prohibit by statute the use of such a fuel. Since sufficient charcoal cannot be obtained, the next object is to procure a fuel nearly resembling it, and this is Coke.

Coke is made as follows: A large quantity of bituminous coal being spread over the ground, the mass is lighted, and when the flames begin to rise, the whole bed of burning matter is covered with ashes to keep out the air, after which the coal is left to burn out and by this process becomes changed into coke.

Should a person unacquainted with the various works of an iron district be conducted into the midst of such a country on a dark night, he would suppose himself placed in the heart of some volcanic region. Here is a valley spreading one fiery bed, resembling a lake of molten matter, swelling with its fierce glow above the surface; there on the side of a bleak mountain, a flaming chasm seems opened in the side of a volcano.

However grand these coking fields may appear to a stranger, the manufacturer is to much engaged in the operation to pay attention to its picturesque circumstances, as profit alone not a striking scene, is his object. The anxiety often attending the work may be estimated from the immense loss sometimes occasioned during one stormy night, when the wind sweeping along an exposed hill prevents the burning mass from being effectually covered by the ashes, in consequence of which an inferior coke is produced, and enormous quantities of the fuel consumed, in spite of all the coker's care. In such a night, a hundred tons of coal may thus be lost by exposure to the atmosphere, an important item in the expenses of a manufacture, requiring the most rigid economy in all its branches. The loss of the fuel, however, is the least mischief produced by a bad coking; the iron will be deteriorated by the defects of the coke, when the latter retains sulphur or silex; and the effects will be seen through every stage of the manufacture, and be at last evident in the quality of the iron itself when brought to market.

Coking Kilns have lately been introduced in some places, but their expense upon a very large scale must be immense, and whether they will ever supersede the coke pits or not is very doubtful. Charcoal made from peat is beginning to be introduced in England for the select iron to make steel. It is far better than coke, and said to be better than wood charcoal. The iron that is made in the northern parts of this State and Massachusetts is of a very superior quality to the English iron, but many lament that it is not better, and give as a reason, that "with wood charcoal and our quality of ores we should equal any Swedish brand."

Electricity Developed, &c.

That elegant and correct experimentalist, Faraday, has shown that zinc and platinum wires, one-eighteenth of an inch in diameter and about half an inch long, dipped into dilute sulphuric acid, so weak that it is not sensibly sour to the tongue, will evolve more electricity in one twentieth of a minute than is given by thirty turns of a large and powerful plate electrical machine in full action; a quantity which, if passed through the head of a cat, is sufficient to kill it, as by a flash of lightning. Pursuing this interesting inquiry still further, it is found that a single grain of water contains as much electricity as could be accumulated in 800,000 Leyden jars, each requiring thirty turns of the large machine of the Royal Institution to charge it,—a quantity equal to that which is developed from a charged thunder-cloud. "Yet we have it under perfect command; can evolve, direct, and employ it at pleasure; and when it has performed its full work of electrolization, it has only separated the elements of a single grain of water."

Cholera Cures.

Dr. John W. Moore states in a Mobile paper, that he cured one hundred or more extreme cases of cholera, not losing one, by the use of tobacco. He administered it in the form of an emetic of the strength of one drachm to a pint.—He first tried it upon a negro whose pulse was gone, his tongue cold, and his muscles so rigid that he rested only on his head and heels. In five minutes he was relieved, and the cure was perfected by drinking a decoction of senna. In his own case, Dr. Moore took into his stomach a spoonful of tobacco decoction, with perfect relief from cramp and diarrhœa. He has no doubt that the cholera may be as easily managed as the fevers of our country.

How many cures we have for cholera and hydrophobia and the bite of the rattlesnake; this last cure for cholera is apparently a tough one, but it has a tough foe to deal with.