NEW INVENTIONS.

Important Improvement in Steam Engines.

Mr. C. C. C. Smith, an ingenious mechanic of Boston, is engaged in perfecting an arrangement of the parts and appertenances of the common steam engine, in such a manner as to nearly supersede the use of the pumps,—prevent entirely the incrustation of the boiler, and save much of the ordinarily requisite attention of the engineer. The principle may be thus explained: The boiler is at first supplied with the required quantity of water, and when the steam is raised, and the engine started, the exhaust steam is immediately condensed in a cold receiver, and the water produced by tbe condensation, is, by the operation of the machinery, forced back into the boiler, without allowing a particle of the steam to escape, thus securing an uniform quantity of water in the boiler. And whenever it is requisite to blow off steam, the escaping steam is also condensed and immediately returned to the boiler. We are aware that the celebrated Perkins attempted the use of this principle in part, with his extra-high pressure engines, but did not succeed; nor did he attempt the condensation of the steam from the safety valve. And it is certain that this plan has never been successfully applied to low pressure engines, though we see no good reason why it may not be done.—We would encourage Mr. S. to persevere till he has brought this important desideratum to practical perfection.

Improvement in the Magnetic Telegraph.

Col. H. W. Cleveland, who has been connected with the line of Magnetic Telegraphs since their first establishment as an assistant, has, we learn, by a recent discovery, overcome the difficulty heretofore labored under of crossing water courses, by a peculiarly insulated wire which is passed in a leaden pipe under water. One of these wires or improvements has recently been placed under the draw bridge at Gunpowder river, and has been in successful operation for several days. It is, we believe, the intention of the company to adopt this mode of connection at the several draws and streams along the line, which will obviate many of the vexatious interruptions heretofore experienced. If the North river and other rivers can be crossed with this improvement, it will be one of great advantage.

Improvement in Carriages.

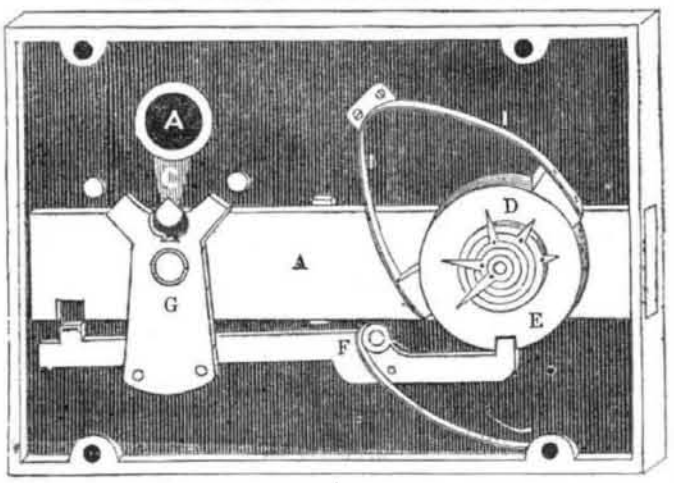
We understand that Mr. Rolmer, a Dutch Cavalry officer now in this City, has invented a new mode of constructing the fore wheels and axle of carriages, by which the wheels move in turning the carriage independently of the axle.—*Tribune.*

If our readers can make out the sense of this description, we shall have to "knock under;" as we find no carriage in the street, the wheels of which do *not* move independently of the axles. Perhaps we may learn more about it.

India Rubber Buffer Springs.

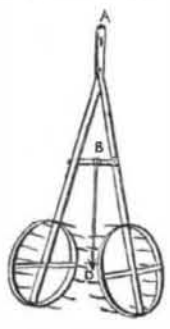
An application of what is termed "Vulcanized India rubber" to the springs of buffers of railway carriages has been patented by Messrs. Fuller & De Bergue, and is in use in some of the carriages of the Great Western railway and on the Eastern Counties railway. The invention appears to be important, and it is stated to have been examined and approved of by Messrs. R. Stephenson, W. Cubit, Brunel, and other competent judges. The buffer springs of Messrs. Fuller combine simplicity with security; and the inventors contend that they are superior to the steel springs usually employed in buffers, because they are at their commencement more elastic and more easily acted upon; the power of their resistance, after yielding to a certain extent, increases in such a ratio as to prevent the possibility of the buffer head being brought to a dead hard stop, and consequently in cases of collision results less dangerous than those which generally ensue can be anticipated. Their lightness, and the facility with which their power may be regulated, are also important advantages. It is difficult, without an experienced judgment, and the practical knowledge of engineering, to give an opinion on such an invention as this that shall be either valuable or influential, but it may be of benefit to the public to call their attention to it.—*English Paper.*

NEW BANK AND SAFE LOCK.



EXPLANATION.—In this engraving is represented a front perspective view of the interior of a lock recently invented by Mr. Almon Roff of this city, and particularly calculated to ensure perfect safety to the vaults or safes of Banks or other places of monetary operations. This like most other locks, consists of a sliding bolt and other machinery arranged with a metallic plate casing: but the view here presented is minus the front plate, knob and circular dial, which we shall describe in their places. This lock requires no key, neither has it any key hole or other aperture whereby gunpowder or other explosive material can be inducted to the interior, but an ordinary knob is attached to the front of the arbor A, to which arbor is attached the bit C whereby the sliding bolt B is occasionally moved forward or back. Through this bolt, near its forward end, is a slot through which projects from the back plate a horizontal stud, which serves as an axle to support a series of cylinders, flanges and indices, as shown at D E, the end of the stud appearing in the centre. This series consists of five cylinders, one within another, and to each of these is attached a pointed index in front, and a broad circular flange D at the opposite end. In the edge of each of the five flanges, is a notch, and as here represented, these notches are all brought to one point, and are filled by an upward projection of the horizontal lever F which is mounted on a fulcrum pivot near F. This projection is called a *stop*, and at the opposite end of the lever is another stop, which is occasionally made to rise into a notch in the sliding bolt. Attached to the lever at its fulcrum pivot, is a spring, the opposite end of which, presses upon the lower casing, and by re-action, tends to elevate the flange-stop and cause it to press against the flanges. A vertical cam-lever G is connected to the sliding bolt by a fulcrum pivot immediately below the knob arbor, and has a notch in the top, corresponding to a notch in the bolt, and both are operated by the bit C. From the two lower corners of the cam lever, two pins project rearward under the horizontal lever; and when the bit is moved either way, the cam lever is put in motion, and one of the pins raises the lever so as to bring the stop into the notch in the bolt when the bolt is drawn back, or behind the end of the bolt when it is thrown forward; in either case, the flanges become liberated from the restraint of the other stop, and the indices may be moved to any other position; but it will be seen that the bolt cannot possibly be moved again till all the flanges are precisely adjusted to admit the stop. To prevent the accidental displacing of the flanges, two small friction blocks are pressed against opposite edges of the flanges by two springs I I. The front plate of the dial has a round aperture through which the indices appear; and a circular dial attached to the front-plate, is so adjusted that the points of the indices appear in front of the dial On the dial are a large number of letters or figures and points, and each index being capable of as many definite positions as there are points on the dial, the five indices collectively and relatively, are capable of upwards of one hundred millions of different positions, only one of which can admit of the moving of the knob, bit or bolt. Add to this, that each index is capable of various positions on its respective cylinder and that the dial itself is moveable circularly, and the chance of the lock being opened or unbolted by a stranger, approaches very near to zero. Mr Roff has taken measures to secure letters patent, and will furnish these locks to order.

New Fish Trap.



Frequently have feelings of humanity revolted at the peculiar barbarity of the ordinary mode of angling, by not only piercing the tongue and jaws of the unlucky fishes with the barbed hook, but by tearing the tongues and flesh from their mouths by forcibly extracting the hook; and many have discarded the sport on that account. But the invention here introduced, while it is much more sure to nab every scaly rogue that presumes even to nibble, and raise him from the water with no other harm than being slightly tickled in the sides. This trap,—the invention of C. Roosevelt Esq., of this city—consists of two toothed hoops, attached to the two prongs of a V spring, or two straight springs united at the point A to which a common fishing line is attached. These prongs are forced asunder and held in that position by a jointed cross-bar B, from the centre joint of which is suspended a fine cord or wire with barbs at the bottom at D to which the ordinary bait is attached. It will be seen that the least downward force applied to this baited wire will remove the prop B, when the circles of pointed teeth will close upon the unwary intruder and he will be done for. Any number may be set by one fisherman. Mr. R. offers to assign the right to obtain a Patent, to the highest bidder within the time necessary to hear from the more distant subscribers to this paper.

Russell's Uranoscope.

The Uranoscope is in the form of a sphere, of more than five feet in diameter, composed of metal rods or bars, so arranged as to represent all the meridians, parallels of latitude, and primary circles usually marked on artificial globes. If the room in which the instrument is shown have a vaulted ceiling, and all other light be excluded from it, except that which comes from a lamp fixed in the centre of the globe, the exhibition of the various planetary phenomena will be rendered beautifully distinct and perfect. The meridians and circles will make defined shadows on the face of the vault, while the sun, moon, stars, and planets of various magnitudes will, on the contrary, cast upon it their radient reflexion. A transparent covering, upon which are painted several hundred stars and the figures of the constellations, may be thrown over the globe at pleasure; and thus the vaulted ceiling becomes at once a perfect representation of the celestial hemisphere. By means of the machinery, its natural motion is given to the earth, and all the phenomena of the rising and setting of the heavenly bodies are brought before the beholder. Every object is seen in its appropriate place; and by changing the machinery, which consists of many varieties, to be substituted at pleasure, a better illustration than it is possible to give in words, is shown of the *precession of the equinoxes,* the equation of time, the eccentricities of the comet, and many other phenomena which no other instrument that I have ever seen could adequately explain. I am aware that it is impossible, by any mere description, to give more than a faint idea of such an apparatus, and therefore it is I am anxious you shall invite men of science to examine it. Besides the phenomena already mentioned, it may be used to illustrate the aspect of the heavens as seen from the earth in every latitude; the apparent annual course of the sun through the signs of the zodiac; the moon through her monthly course; her retrograde motion of nodes, and what are called harvest moons; eclipses in all their varieties; acceleration of the stars; comets in every form of ellipse; the revolution of double stars; and, I have no doubt, in the hands of genious and science, it may be successfully used to solve many problems which are at present either not at all or but imperfectly understood.—*Cor. Nat. Int.*

Flutes.

It may not be generally known that *double* flutes and flageolets have been successfully produced, by which one performer is enabled to execute a *duett.* The contrivance is very simple, being nothing more than the conjunction of the flutes or flageolets, in a collateral position, with a horizontal projecting mouth piece, which, by communicating with, and conveying the breath through both tubes, renders them conjointly vocal and empowers the performer to execute two parts at once. Mr. Brainbridge, the ingenious maker, adds, "in weight and size these instruments scarcely exceed the common sized German flute," and are fingered for both solos and duetts, so that either of them may in an instant be converted into a solo instrument.

The Western Telegraph.

One of the proprietors under the patentees —comes out in a late number of the Cincinnati Inquirer, with an explanation and statement, finally agreed upon, in regard to the Western and Southwestern lines of telegraph, the existence of which has not only hitherto retarded the progress of the work west of Pittsburg, but induced many to doubt whether it would not be abandoned. It seems now almost certain, says the Cincinnati Gazette, that we shall have a line in operation to this city in July next; for surely, the patentees will not refuse their assent to an arrangement which secures them advantages from early construction and in the adjustment of law suits, equal to any thing they give up to effect the settlement.

The plan for making a separate company for constructing the line from Pittsburg to Cincinnati and Louisville, secures the application of the funds raised along that line to its construction and support, and, by bringing the force of both Mr. O'Reily and Mr. Case to engage, at the same time on different parts of the same line, the early completion of the whole is made sure.

The forming of a distinct company to construct the line from Louisville to New Orleans, in like manner secures the application of the funds raised on that line to its construction, and places in the subscribers the control of it when done. The same is the case on the line from Louisville to St. Louis.

The connection on all these lines with each other, is provided for; and the connection is also secured with the Buffalo line, with the Pennsylvania line, and with the lines east from Washington to Baltimore, Philadelphia, New York, and Boston, and even to Quebec. The Stockholders are protected from responsibility beyond the amount they subscribe, and there is little room to doubt that the stock will yield a large profit as an investment.

There is no doubt now that we shall soon have intercourse with New Orleans, by means of this invention. The subscriptions in New Orleans, to the stock of the company, who propose to construct the telegraph between that city and Washington amounted, at the last accounts, to $60,000.

A company has been formed at Charleston to run regular steamers to Havana.