

## NEW INVENTIONS.

## Burglars Alarm.

Mr. William H. Horton, of Jersey City, N. J., has invented and taken measures to secure a patent for the most simple and best Burglars Alarm that we have yet seen. It is simply clock work so arranged and combined with an alarm bell, and a small hinged lever, that the said lever, being slightly pushed by the opening of a room door, will set the alarm bell free, to arouse the sleepers in a room, and defeat the objects of midnight marauders. The apparatus is so neat and small, that every traveller can carry one in his portmanteau, or in his hat or coat pocket. It is made to be secured on to the frame of a room door, which can be done in one minute, and it can also be taken off in as brief a space of time. Persons travelling with valuable articles in their pockets or carpet bags, will find this instrument to be one of the most useful and desirable inventions ever brought before the public for their protection, and it is equally valuable for every householder. They can be made of different sizes, and are not expensive. A very good size made of brass will cost only about one dollar, it is therefore an improvement within the reach of every person to purchase.

## New Plumb and Level Indicator.

Mr. Samuel Reed, of Rising Sun, Cecil Co., Md., has taken measures to secure a patent for an improved instrument of the nature set forth in the caption above. It is strictly a mechanical Level different from the "spirit one." It consists of an index pointer, which by the greater weight of one point, and by turning on a pivot, tells by a dial the true horizontal position of any object on which it is placed, and it also indicates the inclination or number of degrees which the object plumbd, may be out of line. It is a very useful instrument for architects and builders.

## Improved Railroad Car Brake.

Mr. James Davis, of Schuylkill Haven, Pa., has invented and taken measures to secure a patent for an improvement in brakes for cars. The improvement consists in attaching the band of a brake with a hook about its middle part, and hanging the other end, in such a manner that the brake is brought to act evenly upon the periphery of the wheel, so as to produce a direct strain upon the axle: the common brake arrangements throw an uneven strain upon the axles.

## Tilton's Improvement in Violins.

The improvement in violins invented by Mr. Tilton, of Carrollton, Ala., and noticed a short time since in our columns, has been submitted to the greatest performers on the violin, and other eminent musicians in our city, and by them has been fairly tested. The result is, that a large meeting of the musicians was held at the Apollo Rooms on Wednesday last week and a resolution passed stating that the improvement of Mr. Tilton rendered the tones of the violin clearer, fuller, and more mellow.

## Newly-Invented Mortising Machine.

A very ingenious rotary mortising machine has been put in operation at Hardwiss' Sash and Blind Factory, No. 8 Branch street, Philadelphia. It consists of a circular saw, so constructed as to make a perfectly true, square, and clean mortise of any dimensions, in either hard or soft wood, and complete the work in about the time required to remove the chips of the ordinary machinery. The operation of the machine is effected by placing the board edgewise upon an iron bed, which is balanced above the saw by weights suspended on either side of the frame-work. The bed is moved downwards, and by this process the saw passes through an opening in the bed and is brought in contact with the wood, through which it cuts instantaneously. The mortise can be increased to any size, by a repetition of the same operation. Steam power is applied to this machine, and much time and labor is saved by its use in this description of mechanical work.—[Exchange.]

[We cannot see how a circular saw can cut out a square mortise, nor a clear rectangular mortise without passing through the board entirely.

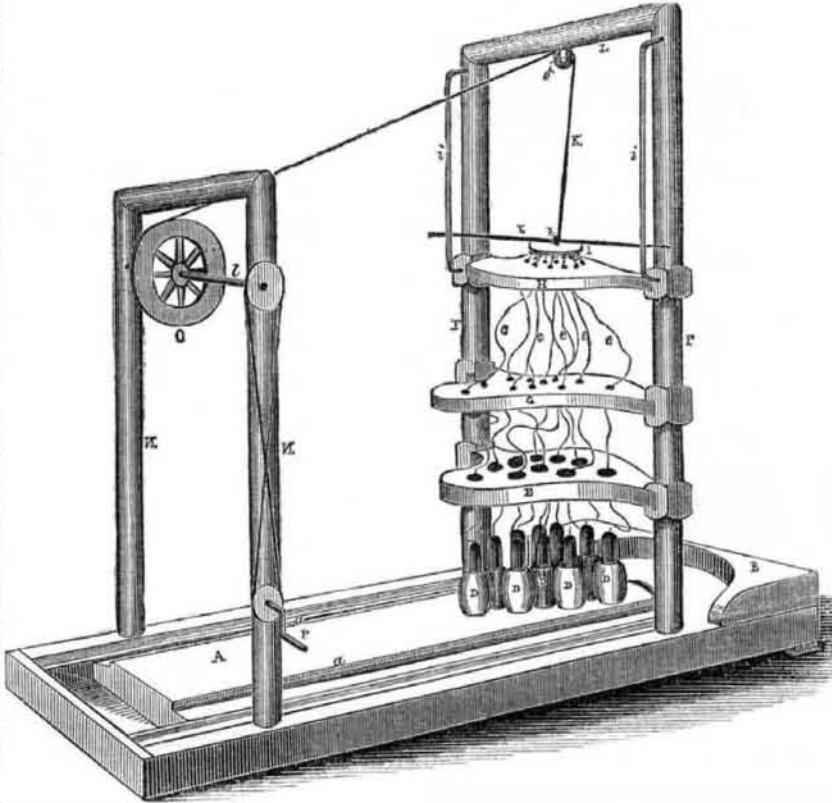
## New Etching Liquor for Copper-plate Engraving.

M. Kobell, of Munich, has discovered a new etching liquor for copper-plate: it is made by dissolving some thin iron turnings in hydrochloric acid, and adding to this solution a hot aqueous solution of hydrochlorate of potash until the liquor assumes the color of pale beer, and gives a reddish brown precipitate by the addition of ammonia. This solution is then diluted with weak hydrochloric acid, and the liquor thus prepared may be kept in a good

condition by adding to it from time to time, a hot solution of the hydrochlorate of potash. As an etching liquor for engravers, the chloride of iron acts by giving up its chlorine to the copper, and changing into chlouret of iron. The liquor, after being used, contains chlouret of copper, which the hydrochlorate of potash converts into chloride of copper; this is as good for an etching liquor as the chloride of iron, since it again is changed into chlouret by the copper, &c., as in the case of the iron.

## IMPROVEMENT IN BALL ALLEYS FOR RECREATION.

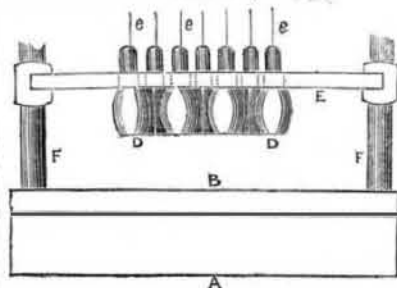
Figure 1.



This is an invention of Mr. Thomas E. Shull, of Lewistown Pa., who has taken measures to secure a patent for the same. The improvement will enable any person, singly, to take recreation by this game, without the aid of any person to set up the pins or return the balls. The balls come back of themselves to the place where the operator is standing, and he sets up all the pins at once himself, at his own end of the alley.

Figure 1 is a perspective view, and figure 2 is a section showing how the pins are guided to be set down on their appropriate places on the way. A is the alley-way, made in the usual manner; B is a curved back, and behind the pins, with an inclination to the sides; a a, are inclined channels for the balls to roll back on; D D are the ten pins, formed with should-

Fig. 2.



ers, which serve for guides. E is an adjusting screen; it is a board made with holes in it, which are of such a diameter as to receive the shoulders of the pins below, so as to retain them steady and truly in the exact position they are required to be set down on the way below, as represented in figure 2. The holes are therefore placed at such a distance from one another as the pins are required to stand on the plane below. F F are two posts to support the adjusting screen, E, also the guide screens, G H, which are formed like E, with guide perforations in them, through which the cords, e e, pass up to the top disc, I, which is fastened to a cross-arm, J, at h, a metal eye through which the arm passes, and to which is attached a cord, K, which passes over a pulley, l, in the cross-head, L, and extends along to the front of the alley-way, where it passes over a pulley, A, on the axis, l, which is supported in the posts, N N. A handle, P, has

an axis on which is a small pulley, having a cord passing over a small pulley above, on the axis, l. The pins are attached to the cords, e e, as represented, and are now in a position for the balls to be rolled against them. It will be observed that the cords are made quite slack, to allow the pins to fall down quite easily. When they are all knocked down, all the operator has to do is to apply his hand to the crank, P, draw up the cords, and the shoulders of the pins into the adjusting openings in the screen board, E, and let them descend gently on the plane below, where they will stand as now represented. The balls, when thrown, strike against the curved back-board, B, behind, and are deflected to the sides, and from the back run forward down the inclined channels, a a.

We have thus described the construction and nature of this invention, which is well adapted for recreation. More information may be obtained of the inventor.

## Montgomery's Corrugated Boilers.

The editor of the Philadelphia Sun states that he recently witnessed a very successful experiment with this invention of Mr. R. Montgomery, which was illustrated and described in our last volume. He says:—

"The experiment we saw yesterday consisted of two pieces of copper, of equal surface and thickness, thrown into arches of about 15 inches in length; the one had a flat surface, and the other two corrugated arches. The arch with the flat surface gave way under a weight of a few pounds, while the corrugated arch withstood the weight of two men, who violently surged upon it, without making the least impression.

A gentleman present who saw an experiment tried upon a larger scale, to test the relative strength of the flat and corrugated arches, informed us that with two arches of the same length, thickness, and weight of metal, the plain arch gave way with 3,126 lbs. of pig iron upon its crown, while the corrugated arch bore the weight of 16,094 lbs. of the same metal for 48 hours, without the least perceptible deflexion. This was afterwards increased to 27,000 lbs. which also remained for 48 hours, without the least deflexion perceptible to the eye.

## Dangers of Modelling in Colored Wax.

The following facts, taken from the Manchester Guardian (England), we commend to the attention of all those, who, as artists, or amateurs frequently model in wax.

"Few persons, especially perhaps of the many young ladies, who are now practising the pleasing art of modelling fruit, flowers, &c., in wax, at all suspect the great danger in which they are placed from the poisonous nature of the coloring matter of the wax which they handle so unsuspectingly. The white wax, for instance, contains white lead; the green, copper; the yellow, chrome-yellow; the orange, chrome-yellow and vermilion—strong poisons all; while many other kinds of wax are equally poisonous, and therefore dangerous. There are very many persons who are aware of the intense sufferings for many years past of Mr. W. Bally, phrenologist and modeller in wax. Mr. Bally has been at times completely paralysed, and is now, and has long been very nearly so, especially in his hands and arms; and he has also been afflicted with extensive ulceration of the throat, and has almost lost his voice. Both himself and his medical adviser, after a long attention to his symptoms, are satisfied that the primary cause of his affliction is the extent to which the subtle poisons in the wax with which he has worked, have been absorbed into his system through the pores of his hands, while the disease has been generally strengthened, and one part of it accounted for, by the occasional application of his fingers to his lips while at work. Mr. Bally says that he has known several cases in which young ladies have been attacked with partial paralysis of the hands and arms, after having devoted some time to the practice of modelling, but at the time he had no suspicion of the cause."

No coloring materials made from arsenic, copper, or lead should be used; but it is a fact, that these, and these alone, are the coloring materials in common use for almost all purposes; colored candies are no better than poisons, especially green colors.

## The Influence of Railroads.

A Railroad Convention was held at New Haven, Conn., on Thursday last week, for the purpose of taking active measures to finish an air line from New York to Boston. A number of very excellent speeches were made, but the one made by Professor Silliman, who has recently returned from Europe, presents something so new on the subject that it cannot fail to interest all our readers.

He adverted to those portions of Europe where he had lately been, that possessed railroads, as being inhabited by a people of superior intelligence. For example, in those parts of Italy, particularly in the Pope's dominions, where railroads did not exist, there was squalid misery, rags, and the most importunate begging, while in Tuscany and Lombardy, and other parts of northern Italy, the people showed a better spirit, a high degree of prosperity, and there railroads prevailed. In England and Scotland the progress of railroads was wonderful. The country was covered with them, and he had been on some of them on which the trains went at the rate of seventy-two miles per hour by the watch, while the average was fifty miles. They moved faster than the wind, or the winged dove; and it was impossible but that some accidents should take place. He hoped that this would be a model railroad, not only in point of construction but for the vigilance of its police. In Germany he saw all along the railroads, a man in charge of every mile, with a signal ready to give warning in case of danger. Though in these countries they were ready to sacrifice men in hecatombs, there was less loss of life and limb by railroads in Europe than here; and Europeans showed a commendable care, which Americans lacked. He was not so much in favor of going ahead as some people. It was better to look ahead first, and then go ahead. For want of this precaution many went ahead and broke their heads. (Laughter.)

A joint society has been formed for monthly communications between Genoa and New York, by vessels touching at Madeira, so as to be in direct correspondence with the English line of steamers to South America. The first voyage is expected to take place next month.