

## New Inventions.

### Time Ball Signals.

The custom of dropping a ball accurately at a given time has been adopted and carried out at the Royal Observatory at Greenwich, London, for many years, for the purpose of enabling outward bound shipmasters to determine the error of their chronometers before leaving port. Within two or three years the American method of chronographic observation has been introduced at Greenwich, and in connection with this, the great clock of the Observatory has been made to drop the ball automatically by a telegraphic signal.

A similar ball has been since arranged at Liverpool, and the Greenwich Observatory clock distributes time signals to various points in the city of London, and over all the chief lines of railroad and telegraph which diverge from the British Metropolis.

No such apparatus exists at present in America, and the only approach to it is the ball upon the U. S. Naval Observatory at Washington, which is thrown down by hand at the word of command. The great commercial port of New York not merely has no precise signal for the regulation of chronometers, but is dependent upon private resources for a knowledge of the time by which the clocks are to be regulated.

In view of this Prof. Bache, of the Coast Survey, and Prof. Gould, of the Dudley Observatory, at Albany, N. Y., have sent a message to the Mayor expressing a desire to supply New York with time, which they offer to be accurate to the tenth of a second. This would be of great advantage to the shipping of the port. The plan to be carried out in this city will be the dropping of a large and conspicuous ball, or giving some equivalent signal in one or more points in the city; and secondly, to regulate any clocks which the City Government may select, by means of the same telegraphic circuit. The necessary annual expense will be confined to the small sum needed for the care of the apparatus, and for the renewal of the batteries. The Dudley Observatory asks for no remuneration, and the requisite apparatus will be far from costly.

We hope our city authorities will accept the kind and generous offer, and provide means to carry out this correct time signaling, as soon as the Dudley Observatory gets into full operation, which will be about August next.

### The French Imperial Cradle.

A Paris letter in the *Independance*, of Brussels, states that the municipal authorities of Paris have given orders for a magnificent cradle to be got ready for the expected infant of the Emperor and Empress of France. It will surpass, it is said, in taste and exquisite workmanship, the famous one presented to the King of Rome. The following is a brief description of the work in question:—

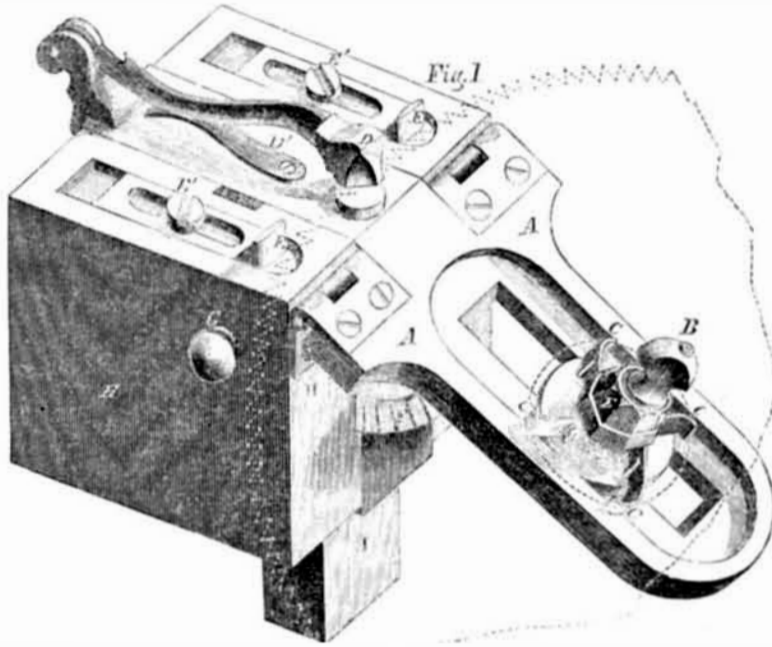
It will be in the form of a boat—the principal emblem in the arms of the city of Paris. At the prow will be a silver eagle, with outspread wings, and the curtains at the head will be supported by an imperial crown, also in silver, held up by two children, one wearing a helmet, and the other bearing round its head an olive branch, emblematical of peace. The body of the cradle stands on two columns, one at the head and the other at the foot, and united by a rail beneath. The columns will be in rosewood, beautifully carved and ornamented with foliage in silver. The upper edge of the cradle will have a border of silver filagree work, having on either side, about the middle, small escutcheons in silver bearing the initials of their Majesties. From these medallions garlands of flowers in silver will lead to the foot and head of the cradle. The curtains will be of point d'Alençon lace and blue silk, embroidered in gold. The composition, direction, and superintendence of this beautiful piece of workmanship has been confided to M. Baltard, the architect of the city of Paris.

[Magnificent as the above cradle promises to be it would be rendered still more *recherche* by the introduction of some of our Yankee improvements. For example, there is the Horological Cradle, invented by David Walker, of Newark, N. J., which swings the rising generation into slumber by means of clock-work,

and effects a vast saving in maternal care and labor. These cradles are very extensively used. Then there is the Musical Cradle of Mr. L. F. Whitaker, of Raleigh, N. C., which is not only swung by machinery but also sends forth sweet sounds of music. Both of these inven-

tions are illustrated in Vol. 6 of the *SCIENTIFIC AMERICAN*. The propelling mechanism occupies so little space that it might easily be concealed beneath the gilt and carvings of the Imperial boat. Will not the French authorities send an order to our ingenious countrymen?

### IMPROVED SAW SET.

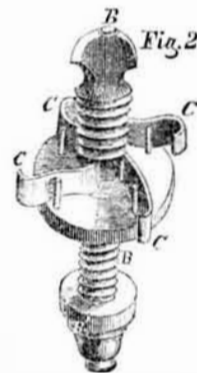


#### Saw Set or Circular Saws.

In the invention illustrated by the accompanying engravings the saw is secured upon the inclined hinged leaf, A, by means of the screw, B, which passes through the center of the saw. The leaf, A, it will be observed, is slotted, so that the screw, B, can be moved to accommodate different sized saws. The screw, B, is furnished with expanding arms, C, which are hinged to the body of the screw, so that the arms are expanded or contracted, according to the direction in which the screw is turned. The office of the arms is to touch upon the inner edges of the arbor hole of the saw, and thus form a pivot upon which the saw is revolved; the arms are made to expand in order to suit different sized arbor holes. E is a nut that screws down upon the arms, C, and holds them in any given position. In fig. 2, the nut, E, is removed so as to show the arms, C, very plainly. B' is another nut on the lower end of screw, B, that binds the latter and its appurtenances, to the leaf, A. The saw being revolved by hand, its teeth are brought, one by one, beneath the hammer D, and set by a blow upon the hammer, in the usual manner. D' is a spring that lifts the hammer again, when it is struck down. The guides, E, are rendered adjustable by means of set screws, E'. The inclination of the leaf, A, is adjusted by means of the screw piece, F, which is operated by the thumb

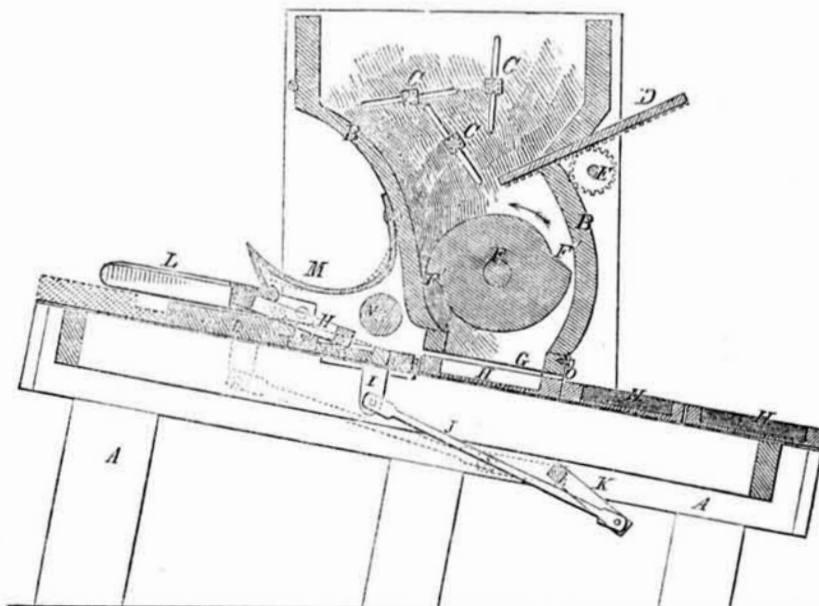
screw, G. The various parts of the apparatus are attached to a square block of wood, H, furnished with a plug, I, to fit into a bench or stand.

We have described this instrument as applied to the setting of circular saws, but it is equally well adapted to the straight saws. All that is necessary to fit it for the latter is the substitution of a screw furnished with a straight rest in place of the screw B.



The cheapness and simplicity of this invention, and its convenient adaptation to the setting of both circular and straight saws, ought to insure for it a very extensive introduction. It is the invention of John G. Ernst, of York, Pa., of whom further information can be obtained. His patent bears date Feb. 5th, 1856.

### MACHINE FOR MOLDING BRICKS.



#### Improved Brick Machine.

The frame, A, stands on an incline, as shown in the engraving. The clay is thrown into the upper part of box B, where it is suitably mixed by the pugs C, which revolve in the

usual manner. D is a slide which divides the box and prevents the clay from falling below into the molds before it is properly prepared. The slide is operated by pinion E. The clay falls upon the pressing wheel, F, which re-

volves in the direction of the arrow. The pressing wheel, it will be observed, is cam shaped, the projections, F', serving to catch the clay and force it down through the grate bars, G, into the molds, H. The empty molds are fed in at the left end of the machine where they are placed on a reciprocating bed, I, which is made to move back and forth by means of the pitman and crank, J and K. The side spring hooks, L, serve to hold the molds during the back action of the bed, I. Spring M also assists for the same purpose, and causes the mold to fall down on to the bed at the proper moment. N is a friction roller, beneath which the molds pass, and are held down as they approach the bars G. Arrived beneath the pressing rolling roller, F, the mold remains long enough to be filled, when it is immediately pushed forward by an empty mold coming from behind. At O there is a scraper, which smooths off the filled molds. The filled molds are removed at the right or lower end of the machine.

This apparatus is simple, and apparently very rapid and effective. We are told that its cost of construction is quite small, that it cannot easily get out of order, and that the quality of the work it accomplishes is the very best. A single machine, we are informed, will mold 100,000 bricks per day. The pressing roller, F, it should be noticed, just fills the box, B, and therefore can never choke up, although the exact quantity of clay necessary to fill a mold will invariably be carried down. Two molds are filled at each revolution of the pressing roller.

The above improvement is the invention of Mr. Richard W. Jones, of Green Castle, Ind., and was patented by him Jan. 15, 1856. He will be happy to furnish further information, by letter or otherwise, to all who desire it.

### Breaking of Railway Car Axles.

On page 166, we copied the views of A. Lindsay, on the cause of railroad car axles breaking off at the hub. He attributed this to the carbonizing of the metal by heat, and the imbibing of the carbon of oil—strange ideas certainly. A correspondent, A. C. Ketchum, of N. Y. City, adopting the more general opinion, asserts that railroad car axles become crystalline and brittle at the hub, from straining and concussions, and that these actions affect axles in the same manner that the twisting of a piece of wire affects it, namely, rendering it easy to break. The weight of the car is placed upon the extremities of the axles, therefore, in turning curves, the hub is the fulcrum, and the axle therefore is subjected to a kind of twisting action at that point.

### Scott Russell Failed.

The late news from Europe contains intelligence of the failure in business of Scott Russell & Co., of Millwall, London, with liabilities amounting to nearly a million of dollars.—The leviathan steamship, 700 feet long, and over 10,000 tons burden, was building at the works of Messrs. Russell, and we are of opinion that this vessel is the cause of their failure, for they were large stockholders.—We hope the building and fitting of this vessel will not be suspended, but we are afraid the good people of Portland, Me., who have lately voted \$60,000 to prepare a dock for her, as one of the traders to their city, will have to wait a long time before they see it. Scott Russell is an eminent scientific engineer, and possesses a bold and original genius, we therefore regret his failure in business. The most difficult part of the hull of this Leviathan is finished, and the engines and boilers are in a very forward condition, and preparations of stupendous magnitude had been in progress for the anxious day of launching.

What are called "self-sealing envelopes" have been found more unsafe than wafers for enclosing letters, so far as it relates to their adhesive qualities. They have been opened and re-closed by postmasters in England, and no person could tell this had been done from their appearance. The adhesive substance used is "disastaste," or flour gum.

Six drops of the chloride of soda in a wine glass full of cold spring water, is excellent for washing the mouth before going to bed, and after breakfast, to remove offensive odor caused by decaying teeth.