

New Inventions.

Locke's Electro Chronograph.

This apparatus, for which an appropriation was made by Congress last winter, has been put in operation at the National Observatory Washington.

The clock case is of fine Italian marble, ornamented with glass panels, set in silver sashes. The dial and hands are like those of an ordinary clock, but the dial is cut out and made a skeleton, for the purpose of giving access to the electrical works behind it. The pendulum is made throughout of glass; to compensate for the expansion even of glass by heat, the weight of the pendulum consists of four large glass tubes, placed side by side, like organ pipes, and filled four or five inches deep with quicksilver. The suspension of the pendulum consists of hardened steel cylinders, rolling on jewelled planes made of polished chrysolite. The mechanism by which the electrical contact surfaces are kept clean and bright is very ingenious and was suggested to Dr. Locke by Prof. House of New York. It consists of a small platinum cylinder which is kept revolving with a wiper to keep it clean. This cylinder has also a longitudinal motion, which, by reciprocation makes the electrical contacts, which occur every second, travel in a spiral, which also revolves. The result is, that the contacts are made every second for 36 days without occurring twice in the same place; and even then it is a mere chance if the contacts are recommenced in the same track.

Every time a contact is made a slight mark is left, by electrical action, on the platinum surface; and when the spiral revolution has been completed, the cylinder is marked all over its surface by geometric intersections.

The clock contains a duplicate interrupter or electrotome, which may be brought into action when desired. It consists of a little tilt-hammer, pivoted concentrically with the pendulum, and lifted by a little arm, or its equivalent, projecting from the pendulum itself.

We have noticed no less than ~~two~~ ^{three} patents recently taken out in England for improvements in Clocks moved by Electricity. The first Electric Clock known was invented in 1815, by a German named Buzengeiger. This was a local clock. The first Electric Clock to move in unison any number however distant, was invented by Bain in 1840. Since then there have been a great number of modifications such as combining a register with the clock, which is a most important improvement.

Remington Bridge.

Mr. Remington who has made such a noise in the world has arrived at New Orleans and has erected a model of his bridge. It extends across a space of ninety-six feet, and is elevated some ten feet from the floor. Its appearance is so fragile, that few men, judging from this alone, would willingly trust themselves upon it, yet plenty walk over it and stand on it. It has four longitudinal supporters, each less than one inch square at the centre, but increasing gradually in size, until at the ends or points fastening, they are 2½ inches square. The bridge has one catenary and two parabolic curves, by which strength and beauty are both secured. The flooring is attached diagonally, and is made to sustain a portion of the strain. The deflexion of the supporters is 22½ inches. It is capable of bearing the pressure of 7 tons; while each of the supporters, occupying their place in the bridge, will sustain a weight greater than the absolute strength of the timber and the direct cohesion of its fibres.

Forceps for Gun Shots.

Dr. A. D. Chaloner, of Philadelphia, has invented a new instrument for extracting balls from wounds, which consists of a pair of slender steel forceps, six inches in length, and terminating in a cup shaped cavity, whose edges are toothed. The instrument, when closed is a probe, and then passed into a wound, the object found, the blades are then opened, and the shot is caught and extracted. Thus but one instrument is used and much pain avoided.

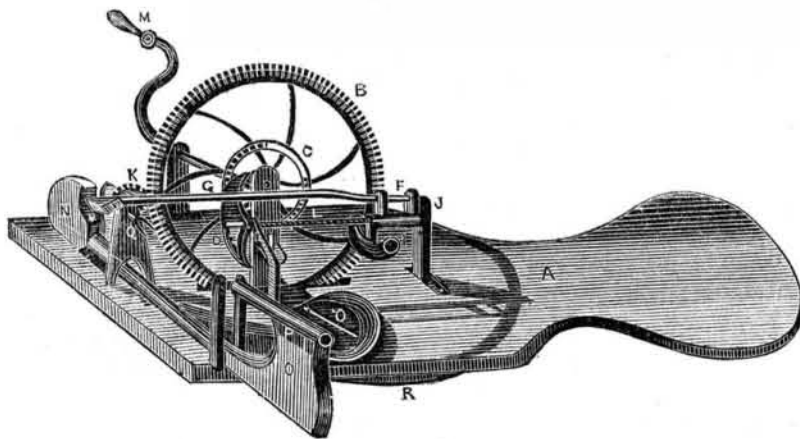
Biscuit Cutting Machinery.

MR. EDITOR—I noticed in the "Farmer and Mechanic," of last week, a communication from a correspondent, Mr. A. Longbottom, giving a description of the machinery used for making biscuits by the British Government, at Portsmouth, England. The establishment is very perfect, and I cannot but commend it to the attention of our Government. The British baking establishment takes the wheat, and in a few hours brings it out baked into biscuit for the Navy, and packed into barrels. In this country the Government would rather lose than gain by assuming the office of Miller, but to have always good fresh bread, it would gain to assume the office of Baker. But my object in this communication was to notice the superior machinery, which the biscuit manufacturers use in this city, for cutting the biscuit, in comparison with that described by Mr. Longbottom, and for which, as he states, the British Government paid a Mr. Grant \$10,000. At Portsmouth the cutting machinery of Grant does not, (as descri-

bed) feed in the sheet of dough to the cutters, nor carry it away. The Biscuit Cutting Machines, in this city, invented by Mr. Nevins, both rolls the dough into a correct sheet, feeds it into the cutters and carries the cut biscuit away. The simplicity and perfection of this American machine, is at once apparent to any person who will take the trouble to visit the Baking Establishment of Messrs. Wilson & Co., Fulton street. The inventor secured a patent in 1836, but he has been subjected to the fate of many of his class, to piracy. This machine was exhibited in England by the inventor three or four years ago, and was greatly admired by Lord John Hay, whose mechanical abilities and scientific accomplishments are of a very superior character. The British Government had too much money invested in the old machinery to adopt any thing new, as the destruction of the old would be the necessary result. And let me state here that this is the reason why many new and valuable machines take a long time to find their way into general favor. Yours, NEW YORK.

NEW APPLE PARING, CORING AND SLICING MACHINE.

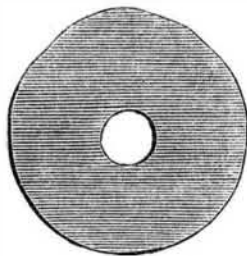
Figure 1.



This machine is the invention of Julius Weed of Painsville, Ohio, and patented by him on the 31st of last July. It combines the paring, coring, and slicing processes, in one operation. When the apple is pared it is placed into a receiver, and it comes out cut into regular slices, like fig. 2. They are just the thing for stringing up, and those who dry apples will at once see the beauty of the operation.

Fig. 1 is a perspective view, and fig. 2 is a view of a slice of the apple, as it comes from the machine. A is a neat frame, B is a wheel with teeth on its periphery; C is a small wheel on the same shaft cast with the large one. Its teeth are only on two sections of it, as represented; G is a small section wheel on the end of the shaft, L, placed in a bearing, J. The sector, D, gears into the teeth of C, and it is

FIG. 2.



carried partly round, pressing on the wooden handle, F, of the knife, V, which is placed horizontally; I is a suspended balance weight on the shaft, L. Q is a fork, on which to place the apple. K is a pinion to revolve the fork by the wheel, B, which is driven by the crank handle, M. The edge of the knife, V, is

Portable Soup Bread.

Mr. G. Borden, Jr., of Galveston, Texas, has invented a new kind of bread, which is a combination of concentrated meat and biscuit. It is made into small cakes and put up into small tin cases, one of which will be food enough for a stout man for a week. It is exceedingly convenient for travellers, or persons at sea, as it will keep for a great length of time. One ounce of it, by crushing and mixing it with three pints of water, if boiled for a few minutes, makes a most excellent soup, enough to make a very decent meal for one person. We have tried some of it, and by sea-

soning it properly we found it to be both palatable and nourishing, good meat and drink, for any person. He has taken measures to secure it by patent.

We would call the attention of our readers to the advertisement of J. A. Brush, in another column: one of these pumps was in operation at the Fair, and attracted much attention. We have witnessed its operation, and give it our approval. Its construction is simple, and it is not liable to get out of order like many others.

Force Pump.

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New Optical Instrument.

Prof. John Locke has invented a curious instrument, named by him Phantascope, which will illustrate, in a manner never before accomplished, "single vision by each eye." It is very simple, and has neither lenses, prisms, nor reflectors. It consists of a flat board base, about nine by eleven inches, with two upright rods, one at each end, a horizontal strip connecting the upper ends of the uprights, and a screen or diaphragm, nearly as large as the base, interposed between the top strip and the tabular base, this screen being adjustable to any intermediate height. The top strip has a slit one-fourth of an inch wide, and about three inches long from left to right. The observer places his eyes over this slit, looking downward. The moveable screen has also a slit of the same length, but about an inch wide. If there are two identical pictures of a flower, about one inch in diameter, placed the one to the left and the other to the right of the centre of the tabular base, or board forming the support, and about two and a half or three inches apart from centre to centre. A flower-pot or vase is painted on the upper screen, at the centre of it as regards right and left, and with its top even with the lower edge of the open slit. By looking downward through the upper slit, and directing both eyes steadily to a mark, a quasi stem, in the flower pot or vase—instantly a flower similar to one of those on the lower screen, but of half the size, will appear growing out of the vase, and in the open slit of the moveable screen. On directing the attention through the upper screen to the base, this phantom flower disappears, and only the two pictures on each side of the place of the phantom remain. The phantom itself consists of the two images painted on the base, optically super-imposed on each other. If one of these images be red and the other blue, the phantom will be purple. If two identical figures of persons be placed at the proper positions on the lower screen, and the upper screen be gradually slid up from its lowest point, the eye being directed to the index, each image will at first be doubled, and will gradually recede, there being of course four in view until the two contiguous coincide, when three only are seen. This is the proper point where the middle or double image is the phantom seen in the air. If the screen be raised higher, then the middle images pass by each other, and again four are seen receding more and more as the screen is raised.

As all this is the effect of crossing the axes of the eyes, it follows that a person with only one perfect eye cannot make the experiments. They depend on *binocular vision*.

All these effects depend on the principle that one of the two primitive pictures is seen by one eye, and the other by the other eye, and that the axes are so converged by looking at the index or mark on the upper screen that those separate images fall on the points in the eye, which produce single vision. To a person who has perfect voluntary control over the axes of his eyes, the upper screen and index are unnecessary. Such an observer can at any time look two contiguous persons into one, or super-impose the image of one upon the image of the other.

Improvement in Sugar Manufacture.

The N. O. Prices Current states that after much study and experiment, Colonel Dakie has reduced to practical expediency and utility a discovery of his own, by which he is enabled to convert the bagasse from the cane-mill into excellent fuel the moment it is discharged from the rollers. This is a desideratum long wished for by the sugar planter, and one which has ever heretofore puzzled and defied the mind of inventive genius to achieve. It is destined to prove one of the most useful discoveries of the age.

New Marine Beds.

Mr. Wm. P. Baker, of Boston, has invented and patented, what he calls a self-adjusting set of Berths, and a Cabin Table, which are kept constantly on a level when the vessel is rolling at sea. It is an ingenious contrivance to do away with sea-sickness, and will be hailed with admiration by ladies who have a dread of the sea.