New Inventions.

Candles made by Railway Process.

The Baltimore American states that Messrs. Mattewson, candle manufactures of that city, have introduced a new English patent machine for making candles, which is both ingenious and possess uncommon merit in an economical point of view.

It consists of a number of moulds, holding 18 each, which are furnished with a bobbin to each mould, holding wick for over 100 candles on each bobbin.

At the commencement the first mould is threaded by hand. It is then placed on a railroad and brought under a cistern from which it is filled with tallow ; it is then shoved along to a carriage, which, when it has received its load, is conveyed by rail outside to an open shed in the yard, where it is allowed to cool. When that operation is completed it still continues its circuit on the railroad, until it arrives at the machine, upon which it is placed and a stroke of a lever ejects the whole 18 candles, at the same time threading the moulds for a fresh charge ; a revolving saw knife cuts off the wicks as quick as the hand can move it across the machine, the ends of the wicks are seized by pincers. which grip each of them as a person would with the finger and thumb ; it is again placed on the rail and continues its course to undergo the same operation. On their way over the rail they are interrupted by a person who removes the pincers and trims the butt ends of the candle.

New Single Blade Propeller.

We learn by the Ledger, that a Mr. Bond has been exhibiting at the Rotunda of the Exchange, Philadelphia, a new propeller, which, by the use of two cylinders, a motion similar to that of the blade of an oar in sculling is given to the propeller. The principle has been tested with this model, which was propelled at the rate of over four miles an hour, and also with a boat 22 feet in length, which was driven by a single engine of ½ horse power at the rate of nine miles an hour, and towed a large line canal boat, which was fifty times its tonnage. The same boat made the run from the city to Burlington in three hours and a quarter, with a consumption of only two bushels of coal.

Not such a great affair after all.

Labor-saving Churns.

C. E. Clark, of Dansville, N. Y., represents that he has made some valuable improvements in labor-saving Churns. He employs three or more rounds in each beater, and applies a beater for the purpose of bringing the cream to a proper temperature without the use of either warm or cold water, as the case may be. The dash is so constructed as to have one beater down all the time, rendering the agitation equal, steady and perfect. Each beater produces a vertical as well as a rotary motion, and is all done in a most simple and economical manner.

Perpetual Motion Again.

The Maine Farmer and Gazette states that Mr. S. B. Walton, of Livermore Falls, in that State, has at last invented perpetual motion, that it can move a clock, and "has been in operation, *unless stopped by some foreign agent*, for a year or more."

There are three perpetual motions at present in the field, one in Georgia, one in Pennsylvania and one in Maine. When will men be wise :—no machine can give out more power than it receives.

Ice Machine.

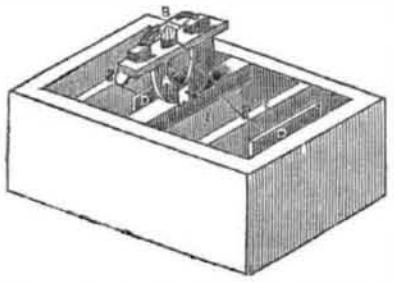
We have received a few lines from one of our valued Southern correspondents, who states that Mr. Wilcox, of New Orleans, has completed his improvements on his ice machine, and by it he will be able to produce ice in large cubes in our warmer climates, at a cost not much exceeding $3 per ton.

New Shaving Cream.

We see it stated that Mr. Isaac Babbitt, the Boston inventor of the Babbitt anti-friction metal boxes, has invented a new cream shaving soap, that can whip off the bristles almost without a razor.

New Method of Electrotyping.

This is a plan to copy devices on metal, whereby drawings or letters, in relief, are obtained to print like wood cuts or metal types. Take a smooth plate of copper, cover it with a thin coating of composition made with one part (by weight) of white wax, two parts of lard, and one of lampblack: grind them with a little olive oil, and then melt it and pour it over the copper plate, which must lie perfectly level. When this mixture is cold, engrave the design on its surface, so that the bright copper is visible along all the lines only. The usual tools may be employed. When this is done, it may be brushed over for rough engravings, with black lead as a conducting material, but for delicate engravings, this will not answer. The best way then, is to plunge the plate into a weak solution of the nitrate of silver, and then expose it for a short time to the vapor of an alcoholic solution of phosphorus. The back and the sides of the plate must then be well varnished, and it is then to be electrotyped.

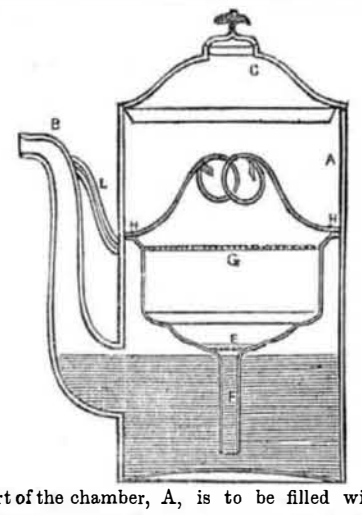


The apparatus for this purpose is very simple :—A square wooden box is procured, with a partition in it of porous wood, but perfectly water-tight. There will then be two cells, over each of which fix horizontally a small bar of iron, and from one hang the copper plate perpendicular into the cell by a varnished copper wire soldered to the centre of its back ; and in a similar manner hang a zinc plate from the other bar, which should be about the same size as the copper bar, but no varnish on it or the wire. The above cut represents an apparatus of this kind, with a rotating magnet on it, which continually breaks and renews the contact between the two plates, and causes the deposition to go on more regular. For small engravings the magnet is not necessary, but for large plates, where time is an object, and delicate lines of not so much advantage, then the magnet may be used, but for fine lines it should not be used.

A is the steel magnet ; B is its armature made of soft iron, and enveloped in a coil of fine insulated copper wire. It is suspended on a fine pivot, which proceeds from the centre of the cup on the shelf, which is around the poles of the magnet ; the magnet itself being supported vertically by the screw on a stout piece of wood over the partition. E. C C are the iron bars, each with a binding screw on its centre, from which proceed the connecting wires, from the plates, D, first, to the mercury in the small cup, F. This cup is divided by a partition, the height of which is regulated that the terminations of the coil which dip into the mercury may pass over without touching, while the mercury from the repulsion which subsists between it and the wood, is divided into two masses, each of which, in the middle, is higher than the partition. When connection is made between the plates, by placing each of the wires in a separate cell of the cup, observing that each of the perpendicular wires of the coil is also in a separate cell, the armature will revolve regularly renewing and breaking contact with the two plates, the rapidity of which depends on the quantity of electricity flowing through the wires. Into the cell containing the copper plate, pour a solution of the sulphate of copper till the plate is covered, and into the other pour water, slightly acidulated with sulphuric acid. If a metalic connection be made between the two iron bars, simply by connecting the two wires from the set screws, an electric action will take place, passing along to the copper plate, depositing pure copper into the engraved lines. The operation should be allowed to proceed for about a fortnight, when the deposited copper will have attained sufficient thickness to be separated from the engraving. It must then be fixed on a block of wood to be the proper height for printing. The cells must occasionally be supplied with materials, as the process goes on, to replenish that which is decomposed. The sulphate of copper must not be allowed to become weak, or the copper deposited will be disintegrated. The plate must be often examined. If the copper is deposited too fast, the copper will be too brittle, and when too slow it will also be brittle. A little experience alone gives correct knowledge to know these things, but it is an experience very easy to acquire.

Improved Method of Making Coffee Extracts.

This is a vertical section showing the interior. It consists of an external vessel, A, which is somewhat similiar to the ordinary coffee-pot, and like that article is furnished with a close lid, C, for the purpose of retaining the heat, and a spout, B, for withdrawing the preparation. The interior of the vessel, A, has another vessel, D, either permanently attached thereto or else fitted to it in an airtight manner ; in the bottom of this inner chamber, a fine strainer, E, is placed and below that it terminates in a small pipe, F, which depends therefrom, reaching nearly to the bottom of the outer vessel, A ; the upper part of the inner vessel, D, is furnished with a strainer, G, but which is of a coarser description than that placed at the bottom ; the strainer is furnished with a handle for removing it from its positon it being fitted into a conical seat, and secured by turning the lugs of the strainer, G, below projections, H, on the interior of the vessel, A. In using this apparatus, the lower



part of the chamber, A, is to be filled with boiling water, to the extent represented in the cut, which is about level with the lower strainer ; this should be the extreme limit, as any further supply would interfere with the perfect performance of the apparatus ; the coffee or other matter from which the infusion is to be extracted is placed in the chamber on the surface of the strainer, E, and the strainer, G, is secured in its place, as before described ; a cork is applied to stop up the spout, and the cover, C, is also placed in its seat, when the apparatus is placed on a slow clear fire, or over a lamp but the slower the operation is allowed to proceed the better, as the object is not so much to boil the water again, but for causing tho air contained in the lower part of the chamber, A, above the liquid, to expand, which has the effect of forcing the water slowly up the tube, F, through the coffee, and the strainers, E, and G, into the upper part of the apparatus ; this process will continue until the water is as low in the bottom chamber as the end of the pipe, F, when it will cease ; this will be ascertained by the forming of blubbers on the surface. The apparatus is then removed from the fire, or the lamp extinguished, as the case may be, and by the cooling of the air in the lower chamber, a partial vacuum will be produced, causing the extract to pass through the strainers into the lower chamber, when it will be fit for use. The cork may now be removed, when the infusion can be poured out as usual, and in order to facility which the lower chamber has a small tube, L, connecting it with the spout near the orifice ; by this means air is admitted above the surface of the infusion, otherwise air would not find ready egress to the vessel, rendering the process both inconvenient and tedious : this air tube is carried into the spout in order that the insertion of a cork in the orifice thereof, may stop all external communication with the lower part of the vessel, so as to carry out the invention with as little trouble as possible. The water, instead of being poured boiling into the apparatus, may be introduced in a cold state, and allowed to boil in the vessel itself ; but care must be taken that the coffee should not be placed in the chamber, until the water reaches the boiling point for to subject the coffee to heat for any length of time before the infusion takes place, destroys part of the delicate aroma which it is so essential to preserve.

For the Scientific American.

Action and Re-Action.

Concluded from page 132.)

The following is the tabuletted experiments referred to in the article with the above caption, on page 131 of our last number, and should be read in connection with it.

No. of Expr.	Product of W. & Dist.	Dist. moved.	of Cars.	Weight	Dist. moved.	Product of W. & Dist.	Sum of Prod.
1st	137	13.7	10	10	13.7	137	274
2d	109	7.3	15	10	16.5	165	274
3d	106	5.3	20	10	18.1	181	287
4th	84	2.8	30	10	19.3	193	277
5th	—	—	Fixed.	10	27.5	275	275
6th	—	—	Fixed.	20	14	280	280

It may be observed that the force of the springs is applied equally to both cars in exp. 1st ; that they are each moved 13.7 inches, which multiplied by the weight, gives 13.7 × 10=137, and this doubled for the two cars, gives 274, as shown in the last column, for the whole force of the spring when equally divided between the two. The experiments No. 2, 3 and 4 give nearly the same results when the force is unequally divided. And exp. 5th gives 175 for the force when it is applied entirely to one car.

The variations from the same amount as carried out in the last column may be owing to some imperfection in my apparatus, or some variation in friction or probably both.

Silas Cornell.

American Inventions.

Mr. Ewbank has recently addressed to the governor of each of the States and Territories, a circular in which he earnestly calls the attention of these officers to his desire to trace up the history of American inventions, and to obtain possession of any facts that may lie hidden in the records of patents known to have been granted, under colonial rule, and other patents granted by more or less of the States previous to their conceding the right to the general government. He remarks that the application of machinery to many branches of art was begun almost solely by the labor and ingenuity of our countrymen, and yet definite information respecting these inventions while in their infancy, is entirely wanting. It is necessary that the patent office should possess information on these points ; but irrespective of the light this information would throw on the origin of the inventions to which they relate, an interest will attach to it as a matter of enlightened curiosity.

He makes a request of the governors, that in case no official documents relating to these inventions are on file, they would refer the subject to any literary or scientific society, or to private individuals who may be in possession of the information sought. All societies, therefore and all individuals, that may be able to place any such information in the hands of the Commissioner, will receive his and the department's thanks.

All information of this kind must be authentic, not hearsay, to be valuable. We trust that the act of the Commissioner, will meet with a hearty response in every state. The departments of Secretaries of State and the old libraries are the places where such information will be picked up.

Sugar Crop.

We learn from the New Orleans Picayune, that the sugar crop of Louisiana for the year 1849 will turn out better, perhaps, than was expected some time ago, and may not be much behind that of 1848. But there does not seem to be much uniformity in the crop, it being much better in some districts than in others.