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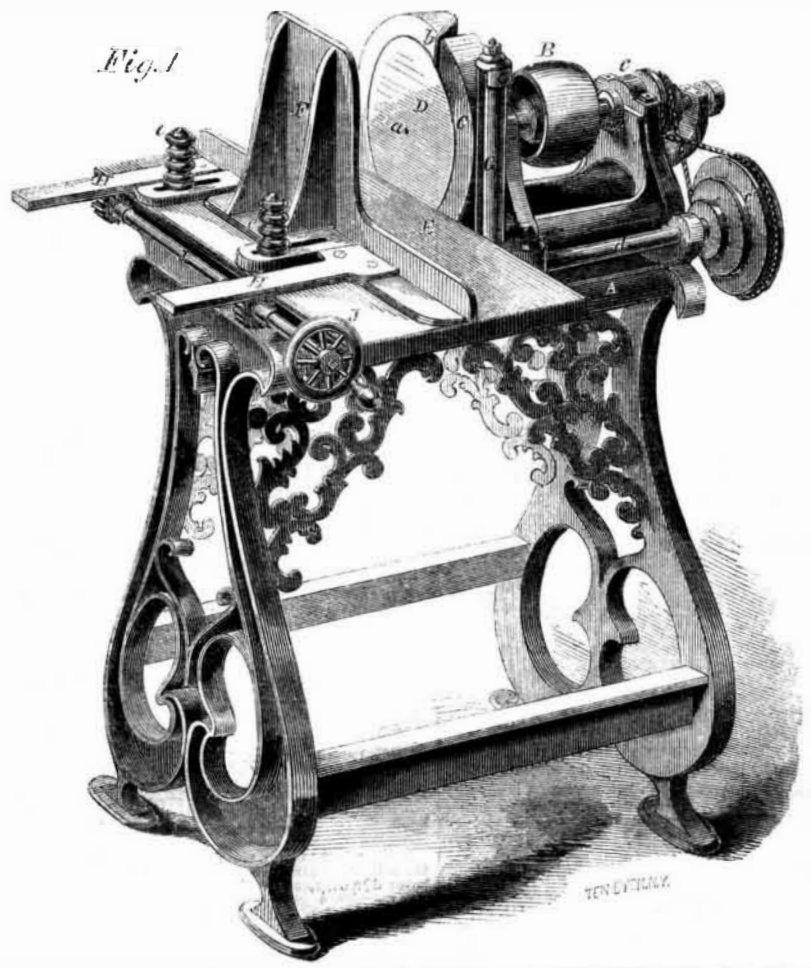
Circulation of Water in Boilers.

A correspondent of the London *Engineer*—John Player, C. E.—gives some excellent advice regarding the construction of boilers and the prevention of priming. He states he was convinced that the danger of explosions would be greatly diminished, and a greater evaporation of steam effected with the same quantity of fuel, were he able to maintain a constant circulation of the water in the boiler. Twenty years ago he commenced to make experiments for effecting this object. In one of his first experiments with a small boiler he could not keep the water in it, on account of priming, so that the fire-box soon became very leaky. He removed this evil by placing a perpendicular funnel-shaped tube in the water, its top being set about one inch below the water surface, while its lower end reached nearly to the bottom of the boiler. In the boiler thus arranged, when the fire was raised, the surface of the water streamed towards the funnel, and descended to the bottom; the heated water then ascended, threw off its steam, and again descended through the tube. He urged the fire with a powerful three-foot fan blast, but was not able to make the boiler prime or raise its water level. Of later years he has used this plan in large steam boilers, and with good effect. He says:—"I feel satisfied that if tubes were placed in the side water spaces of locomotive boilers, they would cause an uninterrupted descending current, and the real level of the water would be more correctly indicated by the trial cocks."

How Coffee came to be Used.

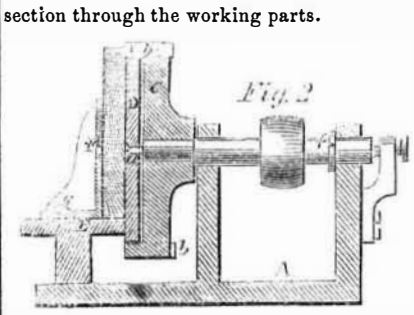
At the time Columbus discovered America, coffee had never been known or used. It only grew in Arabia and Upper Ethiopia. The discovery of its use as a drink is ascribed to the superior of a monastery in Arabia, who, desirous of preventing the monks from sleeping at their nocturnal services, made them drink the infusion of coffee, upon the report of some shepherds, who observed that their flocks were more lively after browsing on the fruit of that plant. Its reputation rapidly spread through the adjacent countries, and in about two hundred years it reached Paris. A single plant, brought there in 1614, became the parent stock of all the coffee plantations in the West Indies. The extent of consumption can now hardly be realized. The United States alone annually consume at the cost of its landing from fourteen to fifteen millions of dollars. You may know the Arabia or Mocha, the best coffee, by its small bean and dark color. The Java and East India, the next in quality, is a larger bean and of a pale yellow color. The West India Rio has a blue, greenish grey tint.

COTTRELL'S PLANING MACHINE.



The portability, simplicity and trueness with which these machines work, is bringing them into very general use, in small machine and carpenters' shops especially, and they fully answer the expectations formed of them. The inventor is C. B. Cottrell, of Westerly, R. I., and he has assigned the invention to Cottrell & Babcock, of the same place. The following description and accompanying drawings will fully explain the invention:—

Fig. 1 is a perspective view, and Fig. 2 a section through the working parts.



A is the bed-plate on which the whole rests, B is a pulley that receives power from any convenient motor, and causes the cutter ring, C, which carries the cutters, *b*, to revolve. On the bed-plate, A, there is also a plate, E, carrying an adjustable disk, D, that fits into the cutter ring, and so forming an adjustable gage. It is connected with the spindle of C and B by a small screw, *a*, and this by being tightened or slackened alters the depth of the cut, or, in other words, gages the cutters. F is a slide rest, which can be worked up to keep stuff of any thickness close to the cutters, by a rack on the projecting arms, H, and two pinions on the shaft, I, that is turned by the hand-wheel, J; and F can be secured in this position by the screws, *e*. A collar, *f*, keeps the spindle in its bearings. The feed motion is obtained by a cone pulley, *c*, being placed on the spindle, and a belt from it rotates another cone pulley *c'*. on a shaft, *d*, which rotates, by a bevel gear, a horizontal serrated feed roller in a case, G. This always keeps the stuff moving, while the slide keeps it to the cutters. We have seen some excellent specimens of planing done by this machine, which is one of the best and simplest that that has come under our notice, and a dressing slide (not shown in the illustration) is furnished with each, so that stuff can be planed out of wind, or on any angle desired, and with a beautiful surface.

It was patented Oct. 5, 1858, and one may be seen at J. B. Schenck's, No. 62 Cortlandt street, this city. The assignees may be addressed for further information as above.

The Odoriferous Products of Flowers.

We love to see the flowers growing, and to inhale their fragrance floating on the evening breeze; and often, when we have for hours enjoyed the soothing influence that their varied colors and richly delicate odors have upon the senses, we have felt a deep regret that we could not preserve the perfume, and have it near us to refresh our weariness or to stimulate our brains, through the medium of the olfactory nerves. We are unable to do this privately; but our good friend and esteemed correspondent, Septimus Piesse—whose pleasant writing has often enlivened our columns—with the gardens at Nice, in Sardinia, and extensive plots in England, (which the firm of Piesse & Lubin, of 2 New Bond st., London, own,) can supply them to the whole world. In those gardens they grow the tuberose, jasimin, acacia, violet, orange bergamot, lemon violet, rose, lavender, peppermint, and all the rarer varieties of plants, whose odors are extracted at the "Laboratory of Flowers." The scents of their production are perfect, and would well pass for the real flowers. The manufactures are gradually becoming better known, and more highly appreciated in this country—the agent being J. Phillips, of 87 Pearl st., this city. We hope that those who use scent will prefer the extract of the pure and simple flower to the mixtures which modern want of taste has caused to be so largely manufactured.

Primitive Modes of Working Iron.

The early productions of the Malagasy smiths were necessarily rude, but since the instructions given to a large number of youths by the thoroughly qualified English smith sent out with the missionaries, their work has been improved, and is creditable to their intelligence and skill, especially when the simple apparatus by which it is produced is considered. The smiths who work for the government sometimes form almost entire villages, and work together in sheds; but the native smith, who on his own account plies his craft, works at the south end of his dwelling. His forge is a simple affair; the earthern floor of his house forms the hearth for his fire, which is kept together by three or four stones. The bellows consist of two wooden cylinders with pistons, similar to those which supply the draft for the smelting furnace. The anvil, which is about 6 inches square, 6 inches high, is let into a thick piece of wood fixed in the ground, with the water-trough, tongs, hammers, and other tools near it. The smith squats on a piece of plank or board on the floor, and his assistants sit or stand opposite him with sledge-hammers in their hands to strike when required; and by this simple process the articles of iron in general use among all classes of the people are produced. —*Ellis's Three Visits to Madagascar*.

Stopping Locomotives.

A cotemporary describes the following method of stopping locomotives by an invention which he ascribes to a Frenchman. He says:—

"In effecting this object, the steam is converted from a propelling to a resisting medium, and presents an elastic obstruction to the advancing piston in the steam cylinder. Over the steam ports of the cylinder a slide valve is applied, composed of iron and steel plates attached together, the steel face being to receive the ordinary cut-off and supply valve, and the iron face lying close to the planed face of the steam ports. This intermediate valve is so arranged that when the break is required to be put into action, it shall slide on its seat, and intercept the passage of the steam to the exhausted side of the piston, and permit the steam to be supplied to the opposite side. A cushion of steam will thus be opposed to the advancing piston, and if displaced by the impetus of the engine acting on the piston, a similar obstruction will then be offered to the other side of the piston as it advances, and so on until the action of the engine is suspended."

This invention may be called a steam-buffer brake, but we do not like it, because it throws the braking strain on the piston rod, connecting rods, and crank pin, in resisting the momentum of the engine. This is an objection which we have to urge against it; on the other hand it appears to be a very simple brake arrangement.