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## USEFUL RECEIPTS.

### Solder for Iron.

We publish the following by request; it was published before in volume 5, but it will be new, we have no doubt, to some thousands of our present subscribers. The receipt is not a new one, but a good old one, none the worse for a little wear.

When the filings of soft cast-iron are melted in a crucible with borax, which has been previously calcined in order to get rid of the water it contains, a hard shining, black pitch-like soldering substance is obtained, being glass of borax colored black with iron.

Sal ammoniac having been applied to the internal joining, or between the overlapped edges of thin sheet iron, some of this black solder being powdered is to be laid along a short portion of the joint, and as soon as it is melted over a clear forge fire, the soldered part is to be placed on the beak of an anvil and beaten with a light hammer and quick hand, as long as the heat permits. More of the powder is then to be laid upon the adjoining part of the joining, until the whole of the seam is soldered.

Another method, which has been published for this purpose, is to melt five ounces of borax in an earthen crucible, and when melted, to add half an ounce of sal ammoniac, and pour the melted matter upon an iron plate. When cold, it will appear like glass, and is to be powdered and mixed with an equal quantity of unslaked lime.

The iron or steel being heated to a red heat, a little of the above powder is to be sprinkled on the surface, where it will melt like sealing wax. The iron or steel is then to be again heated, but considerably below the ordinary welding heat, then brought to the anvil, and hammered until the surfaces are perfectly united.

### Feeding Bees.

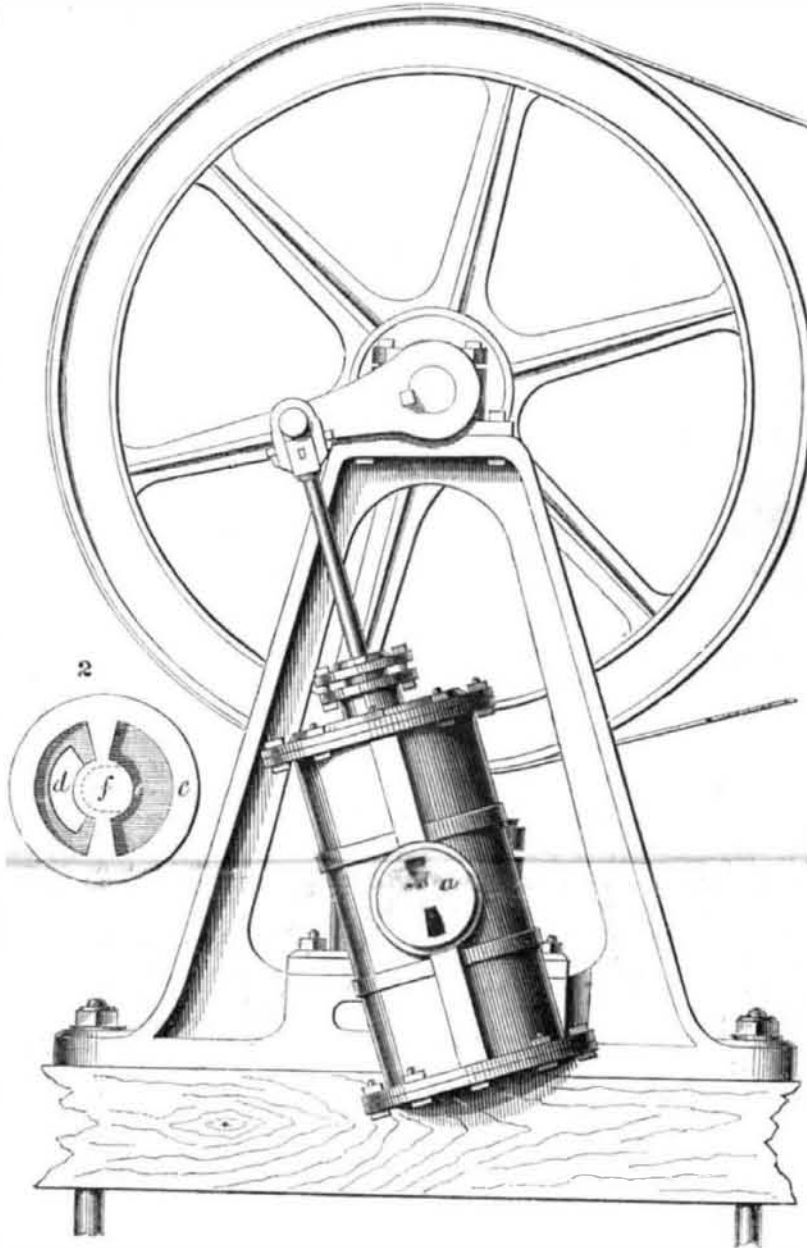
"Put a pound of brown sugar in a low tin dish, wet it with water, and lay a number of small strips of wood across for the bees to rest on while at work. One pound of six-cent sugar produces two pounds of honey."

Our neighbor of the Scientific American must revise his chemistry. How a pound of food can become two pounds of secretion, besides supporting the animals, it is beyond our reach to discover. We have seen the same statement before and commented on it in our last number.—[The Plow, Loom, and Anvil.

[Our neighbor must revise his chemistry. How can a stalk of corn produce more weight of fruit than the guano applied to manure it? The question is not how much honey is produced from a pound of food, but a pound of sugar. Does not honey contain more moisture than sugar. Let our neighbor put 20 pounds of honey in a sugar evaporating pan and expel all the moisture, and then weigh the product and see if he gets any more than 10 pounds of a gummy sugar.

Benjamin Loder, Esq., the well-known head of the Erie Railroad Company, has resigned his trust into the hands of the Board of Directors, owing to continued weak health.

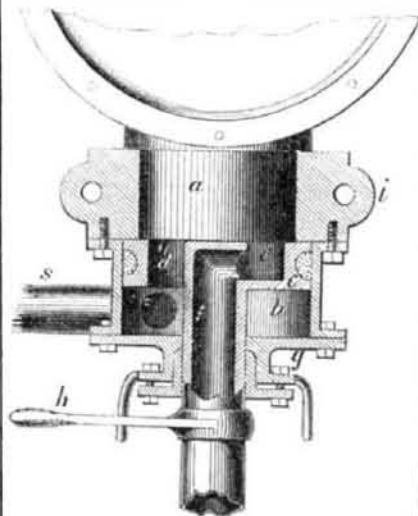
## IMPROVED VALVE AND OSCILLATING ENGINE---Fig 1.



The annexed engravings represent an improvement in the valves of oscillating engines, invented and patented by Wm. M. Smith, of Washington, D. C. Oscillating engines possess the advantage of occupying but little space, are generally light, compared with others, and simple in construction.

One objection which they have heretofore been found to present, has been the difficulty

FIG. 3.



attendant upon the admission and discharge of the steam, and another difficulty has been the friction occasioned by the steam trunnions upon which the engine oscillates, being to

tightly bound in order to prevent the escape of steam. This occasions unequal wear in the trunnions and stuffing box of the piston rod, and also detracts from the power of the engine. The object of the invention is to remedy these defects.

Figure 1 is a side view of the engine with a face view of the steam trunnion. Fig. 2 is an inside or face view of the valve, and fig. 3 is a horizontal section of the valves and steam chest as connected with the trunnion of the engine. The trunnion, *a*, of the cylinder is made as large on the face or end as convenient to admit of long radial passages being made through it: *b* is a short cylindrical steam chest, which is turned on the interior and firmly bolted to the lower half of the plummer block, *i*, forming a cover or cap to the end of the trunnion; in this steam-chest, *b*, is a piston valve, *c*, the face of which is ground, and fits against the end of the trunnion; this valve is fitted with metallic or other packing on its periphery, where it touches the sides of the cylindrical steam chest, and is stationary, thereby dispensing with all valve gear. The steam alternately enters and exhausts to and from either side of the engine piston by the oscillating motion of the trunnion, *a*, which is made with suitable steam ways in it. The action is as follows:—The steam enters through the opening, *d*, of the valve and the exhaust escapes through the concave, *e*, to the pipe, *f*, which passes through a stuffing-box in the centre of the steam-chest cover, *g*.

To reverse the engine, the valve is turned half round by the lever, *h*, fast on the exhaust pipe, *f*; steam is admitted to the cylindrical chest, *b*, by a pipe, *S*, and presses upon the back of the valve to keep it tight. The advantages of this form of valve will be apparent by an examination of its simple structure and mode of operation.

For further information concerning rights &c., apply to the inventor.

### Singular Swamp.

At Capetown, near Dundas, C. W., while the navies on the Great Western Railroad were digging through a swamp, they came across a stream of quicksand so fine as to have no grit to it. The stream is of a pale lilac. As this substance runs out from below, the top of the ground falls in. The track they had laid for drawing the dirt cars on has in many places fallen in, leaving the end of the rails sticking out in some places, while in others they have been swallowed up in toto. It is a curiosity to behold the springs at the source of this singular fluid. It boils up like a pot over a fire, depositing the heavier particles around the mouth of the crater, until it assumes the shape of a mound, the top of which is flat and in boiling motion.

### Vermont Gold.

Rev. Zadock Thomson has written a letter giving an account of his experience in searching for gold in the vicinity of Bridgewater, Vt. He says:—

"The gold is found in the range of talcose slate and steatite, which is known to extend through the found en<sup>th</sup> of the State, from north to south. This range passes through Bridgewater, near the middle, and the gold locality is but a short distance from the centre of the township, towards the southwest. The gold is disseminated very sparingly in veins or seams of quartz, and is associated with the sulphurets of lead, iron and copper. The strata of slate between which the quartz is interspersed dip some 55 degrees towards the east, and the seams of quartz vary much in thickness, and are somewhat irregular—Gold has yet been found in only a few of these seams, and most of which has been obtained was from a single seam, in which several hands are now at work. This is from ten to twenty inches wide, and some portions of it are filled very abundantly with galena, or sulphuret of lead. At a blast made in this seam while I was present, more than one hundred pounds of pure galena were thrown out with the quartz, together with some sulphuret of iron, and a very few small particles of gold; but whether gold or lead will here be found in sufficient quantities to pay for working is yet problematical."

### Greenwood Cemetery.

This populous city of the dead is now arrayed in its summer attire, and its cool shades attract a large number of visitors. On an average, 18 interments take place there daily; and passing the gateway from morning till night, is nearly an unbroken line of funeral processions. During a small portion of the year, the daily number of interments reaches 25 or 30. Since the 1st of January last, the interments number 2,760. The total number of interments since its first organization to the present time, is 26,470, of which 22,712 were made previous to the opening of the present year. The first interment took place in September, 1840.

Some very fine monuments are now erected in it, and we presume that no other single burial place in the world gives employment to so many persons. This city of the dead overlooks New York Bay, and the grounds are very beautiful.

A railroad festival was had at Savannah, Geo., on the 2nd inst. It was a grand affair