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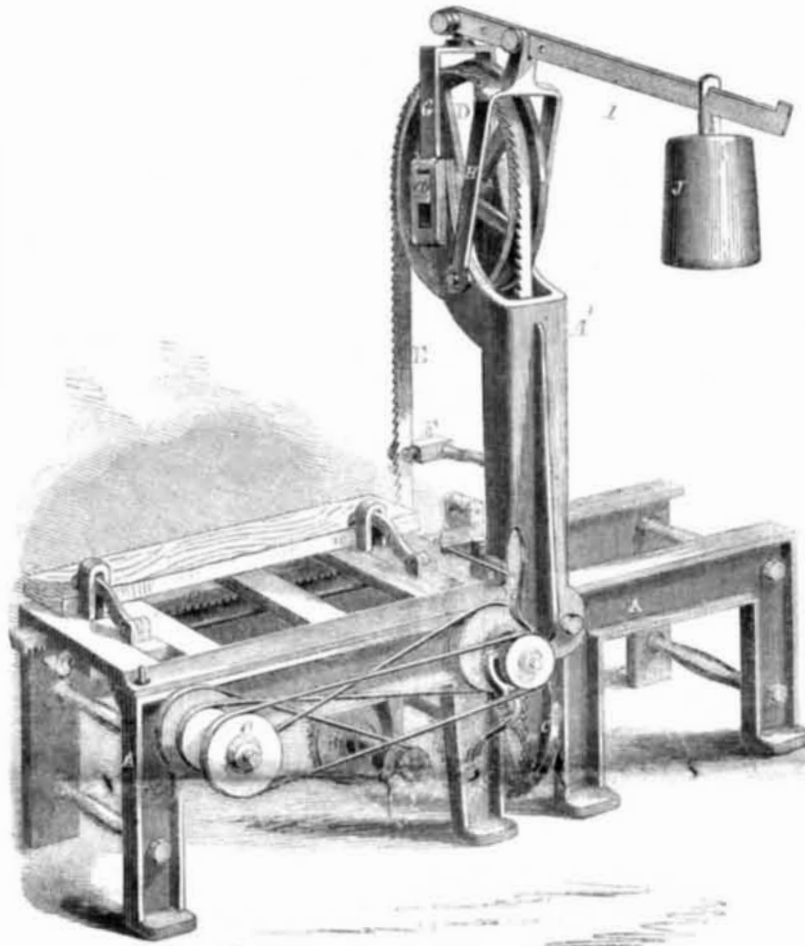
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## The Peach Tree.

This tree is a native of Persia, and has been cultivated in Asia and in the south of Europe from time immemorial. Linnaeus divides the peach into two varieties, the "true peach" and the nectarine—the one separates freely from the stone, the other does not, and is generally designated as the clingstone. There are several varieties of these two divisions, some have smooth and some rough skins; and there are instances on record of peaches and nectarines occurring on the same branch. It was introduced by the earliest colonists and found well adapted for our soil and climate a change, however, has come over the peach during the last twenty years; it does not seem to be so hardy nor so long lived as formerly; it is subject to unfavorable atmospheric influences and also to the attacks of insects which soon diminish its productive power and shorten its days. The cause of this is not well understood, and a preventive for its rapid decay has not yet been discovered. During the past two years the peach crop has been an entire failure both in quantity and quality, and large peach orchards in various sections of our country, once yielding good and abundant crops, are now blasted and barren. A discovery which would restore this luscious fruit-bearer to its former vigor and fruitfulness would be of incalculable importance. At this season of the year—entering upon spring—we urge our horticulturists to give this subject that attention which it deserves.

As peach trees blossom early in the season, they are subject to injury from late frosts; this was the case in many districts in 1858. Dwarf trees may be protected from such frosts by netting laid over them, but it would be too expensive thus to cover large trees. The small green-fly and mildew often attack peach trees, and very few persons ever try to remedy this evil, although tobacco and sulphur water is a perfect cure. Take a pound of tobacco, and pour five gallons of boiling water upon it, pour off the clear, and stir in two pounds of sulphur. When cool, apply it to the trees with a syringe or a garden-engine in the evening, then shower the trees next morning with soft water. Such applications may be required twice a week for three weeks before the cure is fully effected, but by perseverance the desired result will be secured. Most farmers seem to act upon the principle that if their fruit trees do not take care of themselves, they may die if they choose. This is not the feeling, for cultivating peach trees, at least. Some strenuous efforts should be made to restore this tree to the condition and character which it once possessed.

## CAMERON'S SELF-ADJUSTING BELT-SAW.



The principal reason why belt-saws are not in more general use is because, in many machines hitherto devised for carrying them, there has been something faulty about the arrangements which compensated for the expansion and contraction of the saw as it heated or cooled. That the belt-saw is really efficient and of great utility, a moment's consideration of the following points will show:

There is no time lost in the upward motion of the saw, as in reciprocating ones, the belt cutting continuously, the kerf being less than half its diameter, thus saving power, and the power is capable of being used more advantageously than in a circular saw, which may be considered as a lever, working to a disadvantage and throwing great strain upon the arbor, and the kerf is less than one quarter the width with a belt that a circular requires. Some persons not versed in the adhesion of substances to each other, especially the "hug" of belts on pulleys, are inclined to think that the belt would be apt to allow the driving wheels to slip under it and not rotate it when there was any work on, especially if the surface of the wheel be polished like the belt itself. This is a fallacy as our mechanical readers well know, and the adhesive power of polished steel to polished iron, when one is a band and the other a pulley, is very great; more than this, if the belt be 6 inches in diameter and the circumference of the wheel be 18 feet there would be an atmospheric pressure of nearly ten tons making the belt "hug" the pulley. The steel does not easily lose its elasticity from the motion; and every tooth comes in for its share of the work unlike the reciprocating, in which only two feet or less is of use; when a belt-saw breaks, it can be spliced easily and thus a saw may be

thoroughly used up, and not have to be thrown away in the event of an accident.

This narrowness of kerf, too, is an item of great importance. The assignee (a cutter of lumber) informs us that he has now at his mill a belt-saw, a gang of reciprocating saws, and circular saws, all running, and that he can get as much lumber out of 400 feet of timber with the belt-saw as he can out of 500 by either of the other ones. From these observations it will be seen that we have an object in view, and it is to call the attention of our readers to the subject of our engraving—a perfectly self-adjusting belt-saw—invented by David A. Cameron, of Butler, Pa., and patented by him, March 21, 1854. He is since deceased, and John Whitbeck, of Warwick county, Va., has now the control of the patent.

The adjustment is effected in the following simple manner:—The upper belt wheel, D, has its bearings in boxes, *a*, attached to a frame, G, and capable of sliding in grooves in the end of the standard A'; this frame, G, is suspended from a lever, I, whose fulcrum is another frame, H, also capable of moving; a weight, J, can be placed on any part of I, to exactly balance the strain on the saw, E, and produce the proper tension for driving it through the work with ease. As the saw expands the weight, J, draws the upper wheel up and tightens the saw, and the moment it contracts from cooling, it allows the wheel to accommodate itself to the shortening. Each belt wheel, D and C, (the lower one, C, receiving the power) is provided with an adjustable rim that can be adjusted by screws to keep the teeth of the saw always off the wheels. A guide, F, above the timber and one below keeps the saw straight while cutting.

The other parts of the machine are similar to many other sawing machines; the frame, P, carrying the timber to the saw, the timber being held by dogs, L, that are moved to regulate each cut by the shaft, *b*, and have cog-wheels, and a rack on their under surface. The frame, P, is moved, and the timber fed to the saw by the wheel, B, the pulleys, N, O, and a cog-wheel and rack, the frame bearing the rack. A pin at each end of P, catches a little lever, *m*, when it has got to the end of its path, and throwing *m* out, moves the lever, M, and the shipper attached to it thus instantly changing the motion of the frame.

The whole is remarkably simple and well arranged; any further information will be given by the assignee upon being addressed as above. His Post Office address is Yorktown, Va.

## A New Hydro-carbon.

Paragraphs have been floating the rounds of the press for a year or two past, in regard to a peculiar bituminous mineral said to be found in great abundance in some parts of South America.

Mr. F. H. Southworth, of Rio Janeiro, has recently sent us a sample of this mineral by the hands of W. N. Ely, of Stratford, Conn. In color it is a light brown, break with clear lines of fracture as if formed by successive deposits, and has the appearance of lime saturated with crude oil and submitted to a moderate pressure. It burns readily when held to a jet of lighted gas, and gives off a smoky flame and emits an odor resembling bituminous coal, leaving a residue principally of lime. Mr. Southworth informs us that it has been known to exist for five years past on the banks of the navigable river Acarahy, about 40 miles south of Bahia. He applied it for the first time to the manufacture of gas, in April 1858, and it produces about 7 cubic feet to the pound—a greater amount than is obtained from any cannel coal known to us. It contains, however, too much of free carbon to burn with a clear flame, but in making gas by the "Aubin system" in Rio, Mr. Southworth introduces minute jets of steam into the retort, the oxygen of which unites with the fixed residue, and liberates sufficient hydrogen to make a clear and smokeless light. He has been awarded by the Emperor a large mining grant for several years, and millions of tons can be obtained with very little trouble. He believes it will yet be employed largely for distilling coal oil, and that it will also become a substance of large export to various countries for fuel.

It is undoubtedly a rich bituminous substance, but it is far more bulky than cannel coal, and never can be exported so cheaply in our judgment. As a cleanly material for burning in parlor grates, we have never seen any asphalt to equal it.

CURIOUS CALCULATION.—A coal miner in Lancashire has made the following calculation. The quantity of coal raised annually in Great Britain is 68,000,000 tons; if this were excavated from a mine 6 feet high and 12 feet wide, the excavation would be 5,128 miles, 1,090 yards in length. Or, if formed into a solid globe the diameter would be 1,549 feet. Or if piled into a square pyramid, whose base was 40 acres, the height would be 3,356,914 feet.