



## LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending September 18, 1849.

To Franklin Jenney, of New Bedford for improvement in machinery for Dressing Shingles. Patented September 18, 1849.

To James Thomas, of West Chester, Pa., for improved machine for making Brooms. Patented September 18, 1849.

To Henry Bleecker, of Albany, N. Y., for improvement in Flues for Cooking Stoves. Patented September 18, 1849.

To Wm. Wheeler, of Troy, N. Y., for improvement in Cooking Stoves. Patented September 18, 1849.

To Wm. Sours, of Mount Jackson, Va., for improvement in Cooking Stoves. Patented September 18, 1849.

To Elias Kaiga, of Camden, N. J., for improvement in Cooking Stoves. Patented September 18, 1849.

To J. H. Doughty, of New York, N. Y., for Signal for Privies. Patented September 18, 1849.

To George Leonard, Jr., of Shrewsbury, Mass., for improved Fire Arm, with several stationary barrels and a revolving hammer. Patented September 18, 1849.

To Abraham Christ, of Unity, Ohio, for improvement in the Landside of Plows. Patented September 18, 1849.

To Enock R. Morrison, of Angelica, N. Y., for improvement in machinery for Riving and Dressing Shingles. Patented September 18, 1849.

To Lewis W. Colver, of St. Louis, Mo., for improvement in Rotary Churn Dashers. Patented September 18, 1849.

To D. N. Egbert, of Hudson, Ohio, for improvement in Rotary Churn Dashers. Patented September 18, 1849.

To Joseph D. Alvord, of Springfield, Mass., for improvements in Couplings for Cars. Patented September 18, 1849.

To Albert Woodhull & Charles Minturn, of New York, N. Y., (Assignees of John Watson & Edward Cart, of Hull, Eng.) for improvement in Gas Generators. Patented September 18, 1849.

To H. L. B. Lewis, of New York, N. Y., for improvements in Coupling for Cars. Patented September 18, 1849.

For the Scientific American.

## For the Crank.

MESSRS. EDITORS—In the last number of the Scientific American, a correspondent, under the signature of "Pulley," boldly throws down the gauntlet against all those engineers, and others, who have not seen enough, to perceive that the crank is an "inefficient, bungling and wasteful contrivance." He says, that "arguments, tables and drawings have been adduced to prove that the whole power of the steam, as applied to the piston, is faithfully transmitted (by the crank) to produce a rotary motion of the shaft, "and that ridicule has been heaped upon those who dared to question its soundness." Mr. Pulley is certainly mistaken on this point. No tables, nor arguments have ever been adduced to prove that the whole power, exactly, of the steam is communicated from the piston to a shaft by the connecting rod and crank. The ground assumed by the friends of the crank, is this, that it is the most economical mechanical contrivance that has yet been discovered to convert the reciprocating motion of the piston rod into a rotary motion, to drive a revolving shaft. The only ridicule that has been heaped upon those who dared question this truth, was of their own production—the numerous *bungling* contrivances which they have brought forward as substitutes for the crank,—they alone have sat, and do sit, in the chair of the *scorner*. He says, "of the arguments adduced, they appear to me but reasoning in a circle, and the

tables and drawings but the *modus operandi* of the crank engine." Pulley is correct on this point; the friends of the crank have too much good sense to get out of a circle to reason—they leave that kind of metaphysics to their opponents, and if they are content to revolve on their toes, whirling round on the outside of the circle, or fly off at tangents, good and well. The *modus operandi* reasoners of the crank are too well versed in the subject not to know that both statics and dynamics are embraced in the working of the steam engine. There has been so much said by eminent men for and against the crank, that it would now be a jangling of words, to enter into a controversy on the subject. The debate with Mr. Stevenson and Mr. Onion, on this point, at a meeting of the Association of British Practical Engineers, last year, might satisfy any man upon the subject. The great difference between the *modus operandi* friends of the crank and their opponents, lies in this—the crankites can whirl round in their circle and cleverly whisk over the dead power points, whereas the anti-crankites, by traversing outside of the circle, either go down head foremost at the lower point, or get transfixed at the upper one—like the western horse that was found sticking to a rock of loadstone. As we are only on the defensive, we complain of a want of candor and generosity on the part of the opponents of the crank, to blame us for our ingenuity in getting over obstacles, which to them are insuperable.

The great object of all debate should be the advancement of truth—to elicit something new. The best argument which can be based in defence of the crank, is its universal use—its victory over every opponent that has contended for the mastery, as its substitute. Mr. Pulley has advanced no new idea that can lead the benighted advocate of the crank into a better system of mechanical contrivances and combinations. He has only found fault, and I wait to be made wiser by some remedy suggested by him, to banish what he calls the *bungling crank*, from every engine. And let me tell him that he must speak in deeds, and not stigmatize the advocates of the crank, for using it, because there is no better. If he cannot produce a better, he should not speak out on the subject. Many of us, advocates of the crank, were once reasoners outside of the circle, and to our cost, and we don't want to be told that it is a *bungling contrivance*, we want to see a better substitute, and Mr. Pulley may rest assured that, whenever he produces a better (the whole economical results alone can tell) there are men ready to pay well for the use of the discovery.

As it regards the leverage of the crank, it would be more than weakness to answer him,—there can be no two opinions among enlightened engineers on the subject and to do justice to the friends of the crank on this point, it would require a diagram for explanation.

PINION.

## Allaire Works.

## Wagons and Carts.

A farmer in England, named Edward B. Liddington, has produced a prize essay on the comparative merits of wagons and carts, which should arrest the attention of our farmers, for if he is right our farmers, in general, are wrong. After five years' experience with wagons, and nearly the same with one horse carts, on a farm of one hundred and seventy acres of arable and eighty acres of pasture, he came to the conclusion that the carts were of the greatest advantage. As our farmers all use wagons, let them pay some attention to his statement. He says:—I have no light plowing land, nor have I more than twenty or thirty acres of very heavy land. I will, therefore, relate my actual experience. In the employment of wagons and the old broad-wheeled dung-carts, I required one wagon, one cart, and three horses to every fifty acres of arable land. I also kept a light cart for general purposes. Now that I am employing carts, I find that I get through my work much more easily with two horses and two carts to fifty acres."

In the calculation of items, his saving was nearly four dollars on the cultivation of one acre, in the year. Again he says, it is admitted that one horse attached to a given weight

will move it more easily than two horses attached to double that weight. This arises not only from the advantage gained by having all the power of draught close to the work but also all the power applied at the same moment which it almost impossible where two or more horses, having different wills and steps, are attached to the weight; and for the same reason one horse will travel more quickly.

When a cart is filled there is no delay in attaching the trace-horses, during which operation the one horse would be two hundred yards on the road. I know this might be done more quickly by having men ready to change the horses, as in the practice of opposition coaches but I am speaking of the matter-of-fact working of the system. Then again, when the load is deposited, the one horse turns in much less time than the two or three. These facts are too self-evident to admit of the contradiction; indeed, I believe the economy of carting manure with one horse carts is generally allowed, but the employment of them in harvesting is much objected to. In this respect, however, I find them equally expeditious and economical. My actual experience is, that three carts, with the harvest frames attached, will convey as much hay or corn in the straw as two wagons, and that they are bound with the ropes in the same time; therefore no time is lost in binding. They are easier to pitch into than wagons, and not more difficult to unload; and all the advantages are gained of speed in travelling.

My attention was first drawn seriously to the subject from hiring a man to draw some stones for draining. He came with a horse only fourteen hands high and a small cart, when the work he accomplished so surprised me that I at once decided to try two light carts which after succeeding well in all other operations, I employed in the harvest field; and being fully satisfied with them in this capacity, I soon discarded every wagon from the farm.

## Lazy Beavers.

It is a curious fact, says a trapper, that among the beavers there are some that are lazy and will not work at all, either to assist in building lodges or dams, or to cut down wood for their winter stock. The industrious ones beat these idle fellows, and drive them away; sometimes cutting a part of their tails, and otherwise injuring them. They only dig a hole from the water running obliquely towards the surface of the ground, twenty-five or thirty feet from which they emerge when hungry, to obtain food, returning to the same hole with the wood they procure to eat the bark. They never form dams, and are sometimes to the number of five or seven together; all are males. It is not at all improbable that these unfortunate fellows have, as is the case with males of many species of animal, being engaged in fighting with others of their sex, and after having been conquered and driven away from the lodge, have become idlers from a kind of necessity. The working beavers, on the contrary associate males, females, and young together.

## The Horse.

The general contribution of the horse and his rider is alike in many respects. Disease arising from excessive fatigue, overheating, and exposure to the air, want of exercise, improper diet, both as respects quality and quantity, and from many other causes, affects the horse and his master alike, and neglect in either case must terminate fatally. Indeed when a man or horse has acquired, by a course of training, a high degree of health and vigor, the skin of each is an infallible index of the fact.

It has been often remarked in England, that the skin of the pugilist, who has undergone a severe course of training, when he appears for the fight, exhibits a degree of beauty and exceeding fairness that excites the admiration as well as the wonder of the spectators. So with the horse—his skin is the clearest evidence of the general state of his health. Even the common disease of foundering is not peculiar to the horse, but is merely a muscular affection, to which many men, who have overstrained themselves at any period are subject. The medical treatment of the horse and his rider ought to be the same.

## Transplanting Trees.

We find in the Utica Gazette, facts showing that it is not necessary to select small trees for transplanting, in order to ensure their growth. Large trees may be as successfully planted as small ones. The mode and result of an experiment, made by Messrs. Pomeroy and Dutton, of Utica, are thus given: Those gentlemen transplanted trees, comprising maples, elms, beech, etc., some thirty feet in height, which were transplanted without being shorn of any of their branches. The process of removal was as follows: In the fall, before the frost, a trench was dug around the trees selected, from ten to fifteen feet in diameter, and the roots severed. In the winter, when the ground had become solid from freezing, the trees were pulled out by the aid of oxen and levers, with the mass of earth firmly attached to the roots. They were then transported erect on a strong sled, built for the purpose, and set out.

These trees grew in open land, a mile and a half from the city. They put on their foliage just spring as if wholly unconscious that they were not still in their native soil, and the enterprising gentlemen who undertook this unusual course are rewarded with shade trees which by the old practice it would have required twenty years to produce.

[This old and well known plan of transplanting should always be pursued, by those who build their houses on exposed situations, unprotected by standing trees.

## Value of Birds.

Many years ago, the coffee plants, in the island of Madagascar, were attacked by a grackle a well known bird on the Africa coast. The grackle is an insect feeder, but, having used up the supply, it betook itself in pure necessity to coffee. An edict was speedily issued and carried into effect, for the annihilation of grackles, and every bird on the island was destroyed.—All went on very well for a year or two; when, lo and behold, the insect and their larvæ, having the field to themselves, began to make sad havoc upon the coffee. What was to be done? There was no alternative but that of bringing back the grackle, which was in due season imported. The coffee planters had, however gained something by experience, and they resolved to profit by the same; they managed to keep the grackle, within bounds, and they well knew that he would do the same by the insects. And they were right. By preserving a *justo-millieu* doctrine between the two, they were enabled to grow coffee.

## To Cook Without Fire.

Let a utensil be strongly constructed of Tin in the shape of a small chest, 4 feet long, 4 feet broad, and 4 feet high, formed to contain a box at the top, to be closed or fastened down with a lid; one drawer to fit tolerably close in the centre, another at the bottom. Half fill the box at the top and the drawer at the bottom with Quicklime, and pour upon it as much as will be necessary to pulverize it by absorption; then put down the lid of the box and fit in and nearly close the drawer. Afterwards, nearly fill the central drawer with the best steaks, mutton or pork chops, properly seasoned with onions, &c., without adding thereto any water; then close it. After the expiration of eight or nine minutes, or thereabouts, the meat will be cooked, retaining all the richness of its flavor.

## The age for Learning to Sing.

The earliest age, that of six or seven years says Mainzer the great music teacher is the most appropriate for learning to sing—voice and ear so obedient to external impressions, are rapidly developed and improved, defects corrected and musical capabilities awakened.—With several children a few weeks' practice suffice to change the entire character of their voices, which though a first weak and indifferent, and of almost no extent, become strong extended, clear, and in some cases of fine quality. Such instances are best calculated to dispel the prejudices existing against musical instruction at an early age.

Wheat steeped first in strong salt water, and then in a solution of salamoniac, is said to be better prepared for sowing than by any other process.