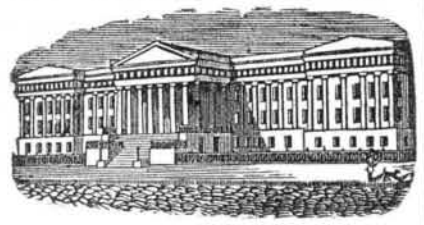

*Reported Officially for the Scientific American*

## LIST OF PATENT CLAIMS

**Issued from the United States Patent Office**

FOR THE WEEK ENDING FEBRUARY 15, 1853

CUT OFF FOR PUPPET VALVE ENGINES—By Horatio Allen & D. G Wells, of New York City: We claim, first, the combination of pawls, with the two arms, whereby the valves are lifted and tripped, as described.

Second, the combination of the arms provided with rollers which, in their action, assist in transferring the pawls from one arm to the other, with the pawls and loose toes, as described.

Third, the making the rollers adjustable with reference to each other, by means of supporting them on independent arms and connecting them to each other and the arms by means of a right and left screw, whereby the point of cut-off may be altered.

Fourth. the mode of operating the loose toes by means of pawls and rollers substantially, as described.

Fifth, the mode of working the valves, by hand, by means of toes supported on the rock shaft, substantially, as described.

CAR SEATS—By John Briggs, of Boston, Mass.: I claim a seat sliding in an arc formed in the framework of the chair, and fastened in any desired position as set forth, whereby the back is madeto follow the motion of the seat in such a manner as to preserve a constant or nearly a constant connection and angle therewith.

HARNESS FOR LOOMS—By D. C. Brown, of Lowell, Mass.: I claim, first, the fliers constructed with a spring nose, or its equivalent, so as to yield the twine, when the needles draw the stitches into the rest, and to take up the binding twine, or draw it tight, when the stitches slip off the needles.

Second, the apparatus or its equivalent for shoving the eyes off of the rod F, consisting of the cam J, slide D, lever, rod C, and slide E.

Third, the revolving spring nose flier or its equivlent in combination with the needle, or its equivalent, for the purposes set forth.

SPIKE MACHINES—By J. C. Cary of Richmond, Va.: I claim sustaining the heading lever upon a movable fulcrum, so as to be capable of adjustment to the requisite distance inside or outside of a vertical line drawn, touching the plane of the face of the griping dies, for effecting the heading of the spike, either up or down, or otherwise in one single motion upon its fulcrum, as set forth.

PAGING BOOKS—By R. M. Leslie, of Philadelphia, Pa: I claim, first, the spring slat type wheels, made after the manner, and operating for the purposes, described.

Second, the combination and arrangement of the spring slat type wheels, the adjustable posts, sliding arms, spring frame, inking rollers, with their tables and the rod K, with its ratchet and pawls, whereby I am enabled to number one side of four pages, by a single movement of the treadles, as described,

ARTIFICIAL TEETH—By L. F. Sheppard, of Alhambra, Ill.: I claim extending a suitable metallic plate over the masticating portion of artificial teeth, to protect them more effectually against injury from use, substantially as set forth.

SAW-SETTING MACHINE—By R. B. White, of Meridon, N. Y.: I claim the combination of the spring hammer. with the tooth gauge, both operating in the manner and for the purpose described.

SEED PLANTERS—By David and Herman Wolf, of Lebanon, Pa.: We claim the movable clearer arranged and operating in the manner and for the purpose set forth.

RE-ISSUE

EXCLUDING DUST FROM RAILROAD CARS—By Ed Hamilton, of Bridgeport, Conn., (assignor to H. B. Goodyear, administrator of Nelson Goodyear, deceased), patented May 27, 1851: I claim inducing outward currents of air through the windows of railroad cars, to prevent the entrance of dust, &c., by the action of the surrounding air on deflectors, combined with the sides of the car, substantially as set forth.

DESIGN.

SEWING BIRD—By Chas. Waterman, of Meriden, Conn.

### Motive Power Without Fuel.

Among the many wonderful discoveries of the age, the Genoa correspondent of the "Newark Advertiser" notes that a complete revolution in the means of steam navigation and locomotion, is anticipated from a recent invention by Carosio, of that city. He has, it is said, succeeded in constructing an apparatus for the decomposition of water by electro-magnetism, which will introduce the gases thus generated into the engine, in a way to save all the expense of fuel! His invention has been approved by savans and practical engineers and a company has subscribed the means of giving it a full experiment. Means have also been adopted to secure patents in all other countries. Mr. J. B. Musso, a respectable merchant of Genoa, has started for the United States, with letters from our Minister at Turin, to the heads of the Patent Office at Washington.—[Exchange.

[This power is to beat the Ericsson all hollow; but why not apply the magnetism to drive the engine instead of the gases which it produces. Magnetism is a motive power.—How sharp some people are; the above invention is like using a steam engine to pump up water to drive a water wheel.

### Riddle's Report of the Great Exhibition.

[Continued from page 182.]

MANURES.—The subject of manures is treated somewhat extensively, and as it is one of great importance to our farmers, and as we have a great many subscribers amongst our agriculturists, we will continue this subject from week to week, until it is completed, in order to have the subject finished about the period when spring cultivation opens.

Every substance which has been used to improve the natural soil, or to restore to it the fertility which is diminished by the crops annually carried away, has been included in the name of manure. It is well known to all practical agriculturists that the texture of the soil, and the proportions of the earths of which it is composed, are the first and most important conditions of its productive powers. Where there is a good natural loam, which retains moisture without being overcharged with wet, and permits the influence of the atmosphere to pervade it, the crops cannot fail to be more certain and remunerating than in loose sand, or tenacious clays; but at the same time it is equally true, that the best texture of soil will not produce good crops for any length of time without the help of manure, to recruit the loss produced by vegetation.

The methods employed in the cultivation of land are different in every country; and when we inquire the cause of these differences, we receive the answer that they depend upon circumstances. No answer could show ignorance more plainly, since few have ever yet devoted themselves to ascertain what these circumstances are. Thus, also, when we inquire in what manner manure acts, we are answered that the excrements of men and animals are supposed to contain an incomprehensible something which assists in the nutrition of plants, and increases their size.—This opinion is often embraced without even an attempt being made to discover the component parts of manure, or to become acquainted with its nature.

In addition to the general conditions, such as heat, light, moisture, and the component parts of the atmosphere, which are necessary for the growth of all plants, certain substances are found to exercise a peculiar influence on the development of particular plants. These substances either are already contained in the soil, or are supplied to it in the form of substances known under the general name of manure. But what does the soil contain, and what are the components of the substances used as a manure? Until these points are determined, a rational system of agriculture cannot exist. The power and knowledge of the physiologist, agriculturist, and chemist must be united for the complete solution of these questions.

The general object of agriculture is to produce, in the most advantageous manner, certain qualities, or a maximum size, in certain parts or organs of particular plants. Now this object can be attained only by the application of those parts or organs, or by supplying the conditions necessary to the production of the qualities desired.

The rules of a rational system of agriculture should enable us, therefore, to give to each plant that which it requires for the attainment of the object in view.

As the composition of soils forms an important feature in the profession of agriculture, it will be our duty to explain, as briefly as possible, some of those which have the most distinct characters from their connections with different geological formations.

There are various modes of distinguishing soils without entering into a minute analysis of their component parts. The simplest and most natural is, to compare their texture, the size and form of the visible particles of which they are composed, and to trace the probable source of their original formation from the minerals which are found around or below them. The science of geology is of great utility in aiding us to compare different soils and ascertain their composition.

The soils which are immediately derived from those rocks, in which no traces of organic remains are to be found, consist either of visible fragments of hard minerals, which are not affected by exposure to air or water, or of minuter particles of the same, of which the shape is not readily distinguished by the naked eye. When they are altogether composed of visible particles and stones, the water readily passes through them; and unless they are kept continually moist by a regular irrigation, without any stagnation of the water, they are absolutely incapable of sustaining vegetation.

It is seldom, however, that any gravel or sand does not contain any portion of earth or other matter, of which the particles become invisible when diffused through water, and to which we will here give the name of impalpable substance. A certain portion of this finer part of the soil, and its due admixture with the coarser, especially where there is some regular gradation of size, and no stones of too large dimensions to obstruct the instruments of tillage, may be considered as essential to fertility.

The soils which have been formed from the disintegration and decomposition of the primitive rocks, such as granite, basalt, or limestone, and those which contain all these minerals minutely divided and intimately mixed, are always naturally fertile and soon enriched by cultivation. The hard particles of quartz maintain a certain porosity in the soil, which allows air and moisture to circulate, while the alumina prevents its too rapid evaporation. The silicate of potash is highly favorable to the vegetation of those plants which contain silica in their stems; in fact silica is present in the ashes of nearly all plants, having entered the plants by means of alkalies.

The primitive limestone, which is very hard, is yet gradually decomposed by the action of air and water, being in a very small degree soluble in the latter. The water which flows through these rocks is soon saturated; but when it springs out and comes to the light, the carbonate of lime is deposited by the evaporation of the water, and if this meets with the clay which results from the decomposition of the slate, it forms a marl, which, naturally or artificially added to silicious sand, forms the basis of a very good soil, particularly well adapted to pasture.

The soils, which have evidently been formed from the rocks, which are supposed to be of secondary formation, are fertile according to the proportion of the earths of these rocks, which they contain. It is of these chiefly that those loose, sandy soils are formed, of which the particles appear as distinct crystals, easily distinguishable with the aid of a lens, or even by a naked eye. Air and water have been the chief agents in the decompositions of those secondary rocks called sandstones, and agitation in water has washed from them the finer portions which have remained suspended. The immense sandy plains which are for the most part barren, have probably once been the shores of the sea, from which the waves have washed all that portion which was impalpable and easily suspended in water, depositing this in the depths, which, by some convulsion in nature, may some time or other be raised above the level of the waters, and form hills or plains of clay.

Argillaceous earth exists, in some proportion, in almost every rock. Some of the hardest gems are chiefly composed of alumina. It has the property, when mixed with other substances, as silica or lime, of fusing into a stone of great hardness and insolubility. In this state, its effect on the soil is not to be distinguished from that of silica; and by burning common clay, or clay mixed with carbonate of lime, a sandy substance is produced, resembling burnt brick, which tends greatly to improve the texture of those clays which contain little or no sand in their composition. It must be remembered that the stiffest clays contain little or no sand in their composition. It must be remembered that the stiffest clays contain a large portion of silica in an impalpable state; but this, instead of correcting their impermeable and plastic nature, rather adds to it. It is only palpable sand, which, with clay, forms what is commonly called loam, and which, when the sand is in due proportion with a mixture of organic matter, forms the richest and most easily cultivated soils. Some of the rocks of secondary formation contain a considerable portion of alumina and lime; and when these earths meet with crystallized sand, a compound, or rather a mixture, is formed, which has all the requisite qualities, as to texture, to produce the most fertile loams. The only deficiency is organic matter; but this is so readily accumulated wherever vegetation is established, or can be so easily added artificially, that these loams may be always looked upon as the most favorable soils for agricultural operations, and if a considerable depth of loam is found, which neither retains water too long nor allows it to percolate too rapidly, it may be looked upon as a soil eminently capable of the highest degree of cultivation. It is known that the aluminous minerals are the most widely diffused on the surface of the earth; and all fertile soils, or soils capable of culture, contain alumina as an invaluable constituent. There must, therefore be something in aluminous earth which enables it to exercise an influence on the life of plants, and to assist in their development. The property on which this depends is that of its invariably containing potash and soda.

### Destruction of Moose and Deer.

The destruction of deer in the eastern counties of Maine for two or three years past has been immense. Not less than six thousand deer have been killed in the counties of Penobscot, Hancock, and Washington, within the last year. Five thousand skins were purchased in Bangor alone. Hunters from other States come in at all seasons, and in many cases apparently for mere sport, and often reserving only the skin as a reward or a trophy. During the present winter loads after loads of carcasses or of saddles of deer have been brought into the Bangor market.

Those interested in the matter, the settlers in these counties, feel that at the present rate of destruction, the moose and deer will soon be annihilated in Maine. They are bestirring themselves in the matter of their protection by getting up petitions to the Legislature, asking for a law imposing a fine upon every person who shall kill a moose or deer between the first day of January and the first day of September. The Legislature, says the "Bangor (Maine) Whig and Courier," will doubtless attend at once to this application, and provide a stringent law for the protection of these animals, and secure to the State a greater benefit than is now derived from their indiscriminate and wanton destruction.

### Ingenious Invention---Ship's Indicator.

Z. A. Wagner has invented an apparatus for ascertaining the speed of vessels at sea, which appears to possess much merit, and is certainly an excellent substitute for the old fashioned log and line. A brass blade about six inches long, is placed at the side of the keel, which, when not in use, is folded close against the keel, and presents no resistance to the water. By means of a rod passing through a tube to the cabin or captain's state room, it connects with a dial plate. The apparatus is thrown into gear whenever the captain is desirous of knowing the rate at which the vessel is going, which turns out the blade, so that the whole resistance of the water is thrown against it, and the exact speed is shown by a hand traversing the dial. The apparatus already made, to be affixed to the sailing yacht White Lily, goes as high as twelve knots, but it can be increased to any number necessary. The importance of knowing to a fraction the rate at which a vessel is going, in order to guide the captain in his calculations, cannot be too highly appreciated.—[Exchange.

The above invention is not new. For an illustrated description of the same thing see page 57, Vol. 6, Scientific American.

### The Great Silk Workshop.

Lyons is the great silk workshop of Europe. The large amount of silk fabrics is manufactured mostly by families and individuals in their own dwellings, for, and by contract with, the large dealers or commissioners.—Many of these last are exporting houses, and many of them associated with houses in the United States.

The stocking makers of Paris have presented the Emperor an address of thanks for making the men wear long stockings.