is hinged to the forward part, so as to yield in passing over stones, &c. The seeding roller is made with ridges, or points, between the excavations for the seeds, for the purpose of agitating them to insure their falling into the excavations. This roller is carried round by two wheels on its axle, which run on the ground. The hopper rests freely on the seeding roller, that part of its surface which rests on said roller being covered with leather, or other yielding substance.

Claim.—"What I claim as new and desire to secure by letters patent, is the manner of constructing the seeding roller with alternate ridges, or points, and excavations for the reception of the seed to be planted; the ridges, or points, operating as agitators to keep the seed in motion, and cause it to fall into the excavations. I am aware that agitators have been frequently used within a hopper in seeding machines, but these have been constructed in a manner much more complex than that employed by me, which method is perfectly effective and simple, not requiring any additional moving parts. I claim the manner of forming the bed piece in two parts, the rear part being hinged to the forward portion in the manner described, and for the purpose of covering the seed that has been planted, and this I claim in combination with the ridge, or keel piece, for forming and preparing the furrow, said keel piece extending along the bottom of the bed piece. I also claim the forming the bearing of the hopper upon the planting, or seeding roller, by means of a piece of leather, or other elastic material, in the manner set forth."

58. For an improved manner of constructing the Grates of Kilns, used for burning lime for the manufacture of Potash, or of Salt;

Claim.—"What I claim as new and desire to secure by letters patent, is the forming the combined bars, or fire supports, arranged as described, in part of metal, and in part of fire-proof, earthy compound, substantially in the manner, and for the purpose, described; and the combining of said compound fire supports with each other by means of a suitable frame, and of a rod, or bar, to which the swinging edges of each of them is jointed, for the purpose of opening or closing them in any required degree, by which means the draught may be regulated, and ashes, or other matter, may be readily discharged."

Specifications of American Patents.


To all whom it may concern: be it known that I, Elihu Ring, of Trumansburg, in the county of Tompkins, and state of New York, have invented a new and improved mode of combining springs and levers, and of applying them so as to sustain the body of a wagon,
Graduating Springs for Carriages.

or other kind of carriage, and its load, in an advantageous manner, they being, by their peculiar construction, capable of being adapted to the amount of the load which they are intended to sustain; and I do hereby declare that the following is a full and exact description thereof:

These combined springs and levers may be arranged in various ways without changing the nature of their combination and action, which combination and action are clearly exemplified in the following drawing. In this, A, A, are the timbers upon which the wagon body is to rest, and which are framed together by means of the longitudinal timbers, B, B, which may be denominated the upper spring bars. The pieces C, C, sustain the axles, and are connected together by the longitudinal piece, or perch, D, D. Between the pieces A and C are the elliptic springs, E, E, which are of the ordinary kind, and are affixed in the usual manner. When the load is light, it is principally sustained by these springs. Instead of elliptic springs, others of any of the known kinds adapted to the purpose, may be used. F and G constitute a connected lever and spring, which are so combined as to be readily adjusted, so as to exert a greater or less degree of force, as may be desired.

The spring G rests against a fulcrum piece, or block, H; is connected at its outer end to the lever F, by means of the spring I, working on a joint pin. At its inner end the spring G may be drawn up by means of a screw nut and bolt, J. The lever F bears by its outer end upon a friction roller, K—its fulcrum being the bolt L, which passes through the timbers, B, B. The spring G is necessarily made very stout, as it is intended to act under the pressure of very heavy loads. A similar lever and spring are seen in the drawing, as acting on the opposite side of the frame; and this resembles that above described, in every particular, but stands in a reversed direction.

It will be seen, that by this arrangement of the springs and levers the whole action may be thrown upon the elliptic springs; that the levers and springs may be lightly strained together, so as to bear their portion of the load when it is increased somewhat beyond that to which the elliptic springs are adapted; or that they may be brought to a high degree of tension whenever the nature of the load renders
it desirable that this should be done. The upper and lower portions of the frame may advance and recede with perfect freedom, the outer ends of the levers, \( F \), playing backward and forward upon the friction rollers, the spring \( G \) acting unobstructedly by the play of its end upon the jointed stirrup.

Having thus fully described the manner in which I combine and arrange the respective parts of the apparatus used by me, what I claim therein, and desire to secure by letters patent, is the combining with the elliptic, or other springs, occupying the situation in which they are represented—the combined levers and springs, \( F \) and \( G \), being so connected and arranged as to operate substantially in the manner herein set forth.

These springs and levers may be increased in number; they may be placed in an inverted position, and changed in form, without materially changing their nature and action; and I do not, therefore, intend to limit myself in these particulars, but to introduce any variations which I may think proper, whilst the same result is attained by means substantially the same.

Elihu Rice.

Practical & Theoretical Mechanics & Chemistry.

Mr. Mallet's Processes for the Protection of Iron from Oxidation and Corrosion, and for the Prevention of the Fouling of Ships.

The discovery of an effectual means of protecting iron, copper, and other metallic surfaces, from the injurious effects of exposure to atmospheric and aqueous influences, had long been an object of earnest, but nearly unavailing pursuit, as well among men of science as among mere practitioners, when the successful application of iron to the building of ships gave suddenly a new impetus and great increase of importance to the inquiry. Sir Humphrey Davy had found out how to save copper sheathing from corrosion, by means of zinc protectors; but subsequent experience showed that, in proportion as the copper was thus electro-chemically preserved, it was rendered more liable to be fouled by the adhesion of animal and vegetable substances—an evil scarcely inferior in magnitude to that of the destruction of the copper itself; and farther than the point so reached by Davy, science had not advanced, when the first iron ship was launched into the deep. Much was at one time said of certain patented processes of zincling, by which it was alleged iron could be so thoroughly coated, as not to leave a speck unexposed for air or water to act upon—and much was hoped from them; but one after another they all proved decided failures. In the best zinced sheets of iron produced by these processes, there were always found a number of spots which had been left bare, by the collection of rust on which, the protective power of the zinc, in respect to the remainder of the iron, was almost entirely neutralized. Of “anti-corrosive” and “anti-barnacle” paints and varnishes there had been also an abundance, both before and since the