sired to form a bank. Every competent machinist will at once perceive that practical modes of effecting these ends are easily devised, and that they may be modified in various ways, whilst the principle of elevating by the inclined plane, is still preserved.

What I claim as new, and for which I ask a patent, is the delivering the earth from the plough, or excavator, as above described, on to an endless revolving apron, or aprons, forming an inclined plane; and by such apron, or aprons, to carry the earth up so that it may be delivered into a car, or other convenient receptacle, or deposit it upon the ground upon the principle hereinbefore described; that is, by the use of the said revolving endless aprons.

DUDLEY MARVIN.

Specification of a patent for an improvement in Water Wheels. Granted to JOEL EASTMAN, Bath, Grafton county, New Hampshire, September 28, 1831.

(WITH A COPPERPLATE.)

To all whom it may concern, be it known, that I, Joel Eastman, have invented a new and useful improvement in the construction of water wheels, and the application of water thereto, and that the following is a correct description thereof.

To a vertical or horizontal shaft I attach two or more floats made of wood or iron, their proper proportions being about two feet long and one foot wide, making a wheel four feet in diameter and one foot long. This wheel is enclosed in a tight curve or case, fitting the wheel closely, and making part of a close trunk, or penstock, extending from the flume into the dead water at the bottom of the fall.

Should the necessary power and motion require it, two or more wheels may be attached to the same shaft, each wheel having its water conveyed to and from it separate from the others. For a vertical shaft there should be a penstock or close trunk, extending as high as the opening for the escape of the water from the upper wheel, and into the water at the bottom of the fall, into which penstock the water passes through an opening from each wheel, each opening being not less than five times as large as that by which the water is admitted into the wheels.

What I claim as my invention is a water wheel, or wheels, constructed in the manner above described, being enclosed in a case, the case being connected with, and forming part of, a tight penstock, or flume, extending the whole height of the fall, and the application of water to the wheel in the manner explained, however the same may be varied in practice.

JOEL EASTMAN.

Explanation of the Drawings. (Plate 3.)

Fig. 1, is a bird's eye view of the wheel and its curve, or case, with the openings for the admission and discharge of the water; the top,

or cover, of the case being removed for the purpose of showing its interior.

A, is the shaft to which the floats are attached.

B, B, the floats, which, in width, are equal to the depth of the case.

C, the edge of the curve, or case, the inside of which is not a circle, but is so formed that the ends of the floats approach more nearly to it as they pass round from the aperture for the admission of water, and almost touch it when they again arrive at it.

D, the aperture for the admission of water on to the wheel.

E, the opening through the bottom of the case into the descending trunk through which the water escapes.

F, the gate or valve to regulate the flow of water on the wheel.

Fig. 2, is a vertical section of the case, a part of the trunk, &c.

A, the shaft, passing through the cover, and giving motion to the machinery.

B, the case, or cover, the dotted lines within which show the floats.

C, the tube, or trunk, through which water is admitted on to the wheel.

D, the gate, or valve.

E, the descending trunk, extending to the bottom of the fall.

F, a bar across, serving as a step to the shaft.

Specification of a patent for rendering Tin Plate more durable when used for various purposes. Granted to JOSEPH M. TRUMAN, city of Philadelphia, September 29, 1831.

To all whom it may concern, be it known, that I, Joseph M. Truman, of the city of Philadelphia, have invented a method of rendering tin plate more applicable to various uses than the ordinary manner of employing it with a simple coating of tin upon the iron, and that the following is a full and exact description of my said invention.

The purpose which I have in view is to preserve the iron more effectually from rust, and consequently to render the plates much more durable than heretofore, when employed for the covering of roofs, the making of pipes, gutters, cisterns, bathing tubs, and various other articles. In order to attain this end, I cover the tin plates with a coating of lead, by immersing them in a bath of that metal in a state of fusion. For most purposes, I dip the plates singly into the lead, after having dusted them with powdered rosin, or any other suitable flux, after which I unite them together in the usual way.

When required for gutters, I generally groove the sheets together, so as to form strips of convenient length; these strips are then passed through the melted lead; immediately from the bath I cause the strips to pass between one or more pair of rollers, which rollers may be made of wood, or of metal covered with several folds of cotton cloth, or other yielding substance: these rollers I keep greased with oil or tallow.