

Science and Art.

Artesian Wells on the Western Plains.

In our last volume we noticed the efforts that had been made, in 1855, by the U. S. Corps of Topographical Engineers under Capt. Pope, to sink artesian wells in the Western wilderness of Llano Estacado. An article in the New Orleans *Picayune* gives some account of his labors during the past season. It says, "In sinking the wells Capt. Pope found no difficulties in the geological formation. This is entirely composed of alternate strata of indurated clay and cretaceous marls of every variety of color, easily bored through, but sufficiently hard to prevent the walls of the boring from falling and incommoding the labor. The first stream of water was struck at a distance of 360 feet, and it rose to the height of 70 feet in the tubing. Continuing the labor, through the same formation, the second stream was struck at a depth of 641 feet which rose 400 feet in the well, or about 50 feet higher than the first stream. These labors demonstrated the existence of water streams beneath the surface, but as winter was approaching, and the material which he had brought having been exhausted, Capt. Pope went into winter quarters on the banks of the Rio Grande.

Having received fresh supplies in the spring of the present year, he returned to Llano, and in April last resumed his labors there. His former attained results having demonstrated the existence of abundant water beneath the surface, he went five miles eastward from the first well and there sunk the second. In the prosecution of this work he struck the same stream that he had found in sinking the first well, and on reaching a depth of 860 feet, he encountered another which rose 750 feet in the tubing.

Through the absence of water the Llano Estacado forms a complete barrier to travel between the western towns of Louisiana and Arkansas to New Mexico and the Messilla Valley, along the line of the 32nd parallel, by a route which is some hundred of miles shorter than any other. It is covered throughout with grama grass, which is one of the most nutritious of the grasses for cattle, and which has the greater advantage that it is not killed by the cold of winter, affording abundant pasture all the year round. Fuel, too, is everywhere obtained with great ease in the mosquito root. This is a remarkable root, and might be more properly termed a subterranean forest. Its stems penetrate the earth to a distance of seventy feet in depth, with ramifications similar to the branches of trees, and with a clear and hard wood stem from five to eight inches in diameter."

Manufacturing Ice.

This is rather a cool subject at this time of the year, winter being at hand, but not the less interesting on that account to the vast majority of the population of this globe. For cooling beverages, and preserving meats, and various kinds of fluid, nothing is equal to ice. It is one of the most desirable necessities and luxuries of life in warm climates, hence we have received letters expiating on the benefits that would be conferred upon those dwelling in our Southern States by the invention of some machine, or the discovery of some new process by which ice could be manufactured at any place and in any season; and we have been informed by some of our southern subscribers that if it could be produced artificially for five dollars a ton the invention would come into very general use. A few weeks since it was stated in our columns that there was a machine in operation at the Sheboygan Works, Cleveland, Ohio, which manufactured ice for about this cost.—We stated to a correspondent who had made inquiries of us respecting this machine, that if cooling chemical mixtures were required in the process we did not believe ice could be produced by it thus cheap.

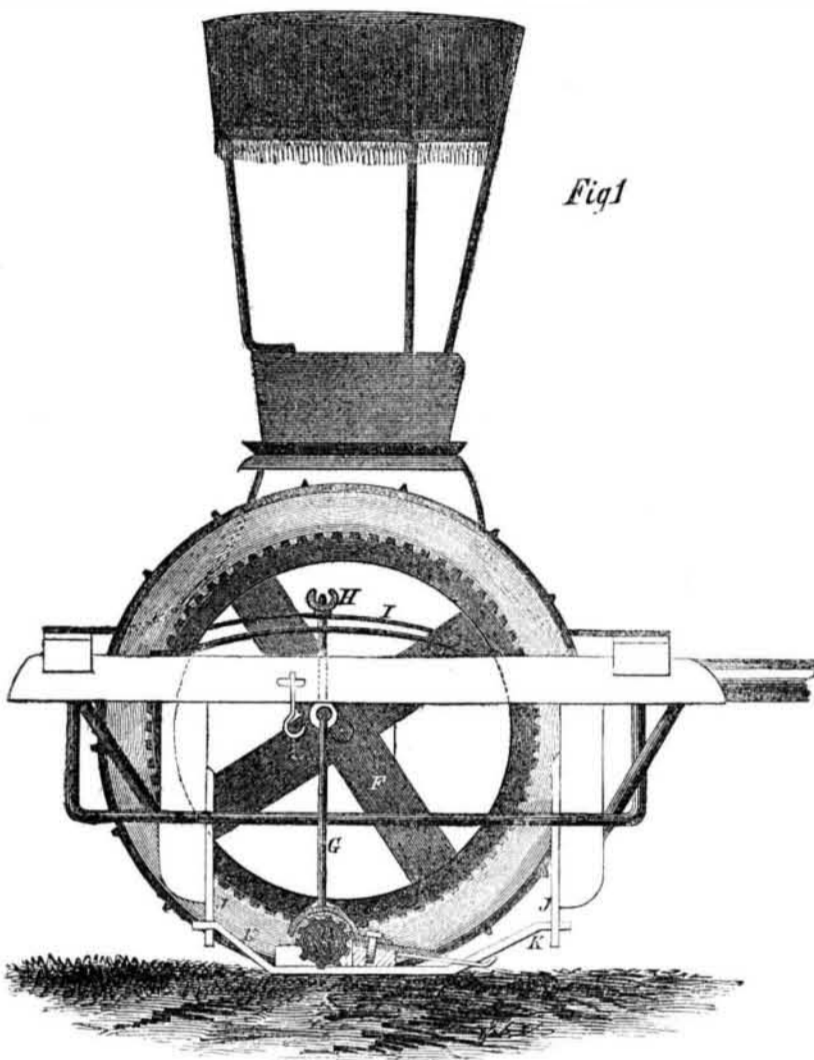
We have received a letter on this subject from E. T. Sterling, of Cleveland, Ohio, who says it is a very simple machine, and although chemical mixtures are employed to reduce the

temperature of the water to be frozen, yet ice can be made by it for less than five dollars per ton.

Wereally hope that this ice machine is a success, still it is our opinion that the process must be expensive. It is well known how to make ice artificially, but to do so economically has been the great obstacle to its usefulness, for unless ice can be manufactured in any place as cheap as natural ice can be sold,

then it is of no benefit whatever. The expense for the refrigerating chemicals to be used in making a ton of ice cannot be small. Two or three barrels of salt must be required for every ton, and to this must be added the expense for operating the pumps. Positive minute information on these heads would be of interest to our southern readers, who are deeply interested in such an invention. Will Mr. Sterling furnish them?

GIG TOP HARVESTERS.



New Harvester.

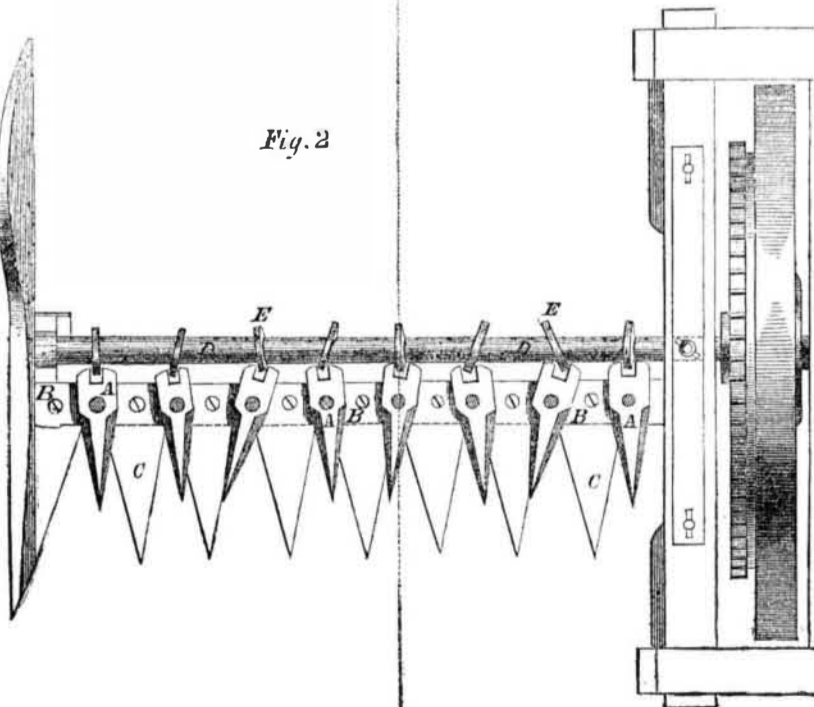
Our engraving illustrates an improvement in mowing and reaping machines, patented Sept. 2nd, 1856, by Oren Stoddard, of Busti, Chautaque Co., N. Y.

The invention consists, principally, in a peculiar method of operating the cutters, whereby they are made to cut separately and in succession, instead of all simultaneously, as in other machines.

An improvement is also made in the mode

of attaching the cutter bar to the machine, whereby the cutters rise and fall in conformity to the surface of the ground, or when impediments are in the way. The cutters may also be raised at pleasure. Fig. 1 is a side elevation, and fig. 2 a top view.

A are the cutters which move independently, and are separately pivoted to the bar, B. C are the stationary fingers, arranged as usual. The cutters, A, are made to move back and forth across the surfaces of C, and thus clip



the grass, like shears. The cutters are moved by means of small cams, D, which are attached to shaft E. It will be observed that cams D

are all arranged at different angles, so that when they revolve no two of the cutters will be in the same position at the same time. The

resulting effect is, that the power required for cutting is gradually applied and evenly distributed through the cutters. In other machines the cutters all act on the grass simultaneously, for they all have the same angle, and are all moved alike. The power for cutting is thus applied suddenly with a jerk, and ceases in the same manner. This inequality of motion is alleged to be injurious, both to the horses and to the machine.

Shaft D is rotated by the large driving gear wheel, F. The inner end of the cutter bar is hung, in part, upon rod G, whose upper end rests upon the elliptic springs, I. These springs impart a certain degree of elasticity to the cutter bar, B, to enable it to pass over obstructions easily, etc. The length of rod G is adjusted by set screw H.

The inner end of bar B is also swung or pivoted to the pendants, J, by means of strap K, so that when desired, the outer end of bar, B, with cutters, may be turned up, and the whole lifting apparatus lifted from the ground. The various improvements named are crowned by furnishing the driver's seat with a gig top which affords protection from the scorching rays of the summer's sun.

The inventor states that this harvester is drawn by one horse with as much ease, and will do as much work as many of the ordinary two horse harvesters. It works equally well whether drawn at a slow or a quick pace. Weight of the machine, 360 lbs. Price \$80. By detaching the mechanism, the gig part can be used for a vehicle of that class. Address the inventor as above for further information.

A cotemporary states that 300,000 persons are employed in France in the manufacture of window blinds from printed muslins.



Inventors, and Manufacturers

TWELFTH YEAR

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