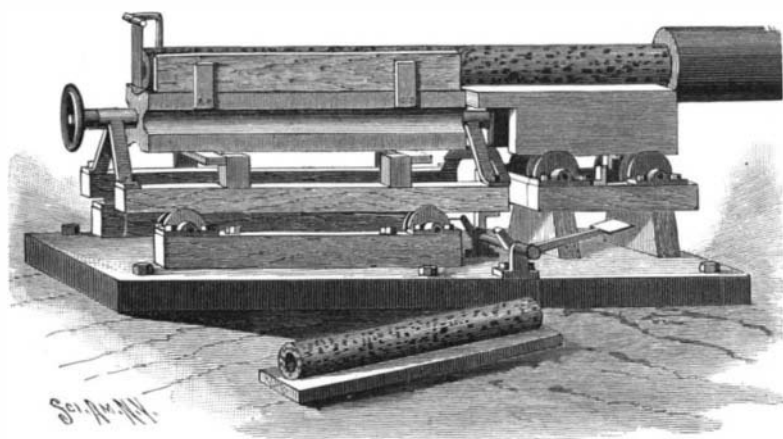


AN IMPROVEMENT IN CLAY-CUTTING TABLES.

It has hitherto been possible only with costly and complex machinery, to cut clay and other plastic material, into any desired length. It is the purpose of an invention recently patented by Arphad Snell, of Tice, Ill., to obviate this difficulty by providing an inexpensive machine which is of simple construction, which can cut clay into any length, and which so delivers the material that it can be safely carried to a baking oven.

The machine comprises essentially a table made in two sections mounted upon flanged guide-rollers, one section being capable of end movement only, and the other section of both end and rotary movements. The rotary section has a number of grooved receiving faces; a hand-wheel, through the medium of which the faces may be revolved; and an adjustable gage. On the receiving faces, extensions are carried which support a board upon which the moulded clay is carried away. Stop devices on both sections of the table limit the end movement of the sections.

When it is desired to use the table, the section having end movement only, is carried as close as possible to the delivery end of the mold; and the inner end of the rotary section is shifted as close as possible to the first-named section, the parts being held in this position by the operator's pressing on a foot-lever controlling the stop-devices of the rotary section. After the outer end of the molded clay has reached the gage, both sections of the table are allowed to travel on their rollers, until the stops on the sections having end movement only, limit the movement of that section. The molded clay is then cut by hand at the point where the two table-sections meet, whereupon the rotary section is turned by means of the hand-wheel, and the clay deposited upon a board previously placed in position against the extensions on the upper receiving face of the rotary section. Another board is then placed in position; the two sections of the table are returned



SNELL'S CLAY-CUTTING TABLE.

to their original position; and the operation is repeated. The apparatus is particularly designed to cut clay into lengths suitable for fence-posts. The material, it will be observed, can be cut and discharged without interrupting the molding process or the delivery of the material.

The Eclipse of the Moon.

The total eclipse of the moon on December 27 was viewed with considerable success at the United States Naval Observatory at Washington. Owing to partial cloudiness, several of the occultations could not be observed. The moon was scheduled to enter the shadow at 4:57 o'clock and the totality to begin exactly one hour later. The actual time was a few seconds later. According to the arrangement made by the Observatory at Pulkowa, Russia, one hundred and three occultations were to be observed in different parts of the world and twenty-one were assigned to the National Observatory at Washington. Seventeen of the twenty-one occultations were observed and the rest were obscured by clouds. The scientific value of the eclipse will be chiefly verifying the knowledge which has already been obtained by other methods regarding the same diameter of the moon. Observations were also made at New Haven, Conn., at Columbia, by Prof. Rees, and at Princeton, N. J., by Prof. Young.

The eclipse was viewed with great success in Berlin at the Treptow Observatory by Prof. Archenhold, who photographed it in all its phases. At Berlin the moon entered into totality at a quarter to twelve o'clock, when the colors became brighter than previously. It was first a dark brown with a streak of yellow; next a reddish brown, and lastly a beautiful combination of colors, as though pierced by the rays of the sun. The silver-white line then kept spreading, and at twenty-five minutes past twelve it was at the maximum. In every phase the delineation of the moon was visible; that of the shadow of the earth was much less clear. It is stated that Mars became very red during the period, becoming more intense according to the color assumed by the earth's shadows.

A CONVERTIBLE VEHICLE.

In the annexed illustration, we present a vehicle having a wheeled frame within which the horse is harnessed, the frame being provided with removable parts by means of which the vehicle may be converted into a coach, buggy, or wagon.

The frame has two horizontal side bars, upon each of which standards are mounted at the front and rear. The rear standards project below the side bars, and receive the rear axle of the vehicle. At the lower portions of the front standards, forks are mounted to turn, between which forks the front wheels are carried. Vertical spindles on the forks move in slotted casings at the lower ends of the front standards, and are engaged by arms having movement relative to the forks and held in place by pins. Should the frame be slued laterally at its front end, by the pressure of the horse on the frame, the front wheels will be slued in a corresponding direction. By arranging the parts of the frame in various ways, it is possible to transform the vehicle into a buggy, a coach, or a light wagon, as shown respectively to the right, center, and left of the accompanying engraving. When used as a coach, the vehicle is provided at the top with seats, to which the passengers may ascend by means of a folding ladder. When the vehicle is used as a buggy, or as a wagon, the seats and the intermediate standards are removed, and the front standards rigidly braced by crosspieces. In order that the horse may be readily enabled to slue the frame to the right or to the left, under the action of the reins, the inventor employs a strap passing from the horse's collar to the front standards. Check reins secured to the bridle of the horse, are reeved through rings carried by the body of the vehicle. The vehicle is the invention of Thomas J. Cox, Enon, Ala.

The Weather Bureau in Cuba.

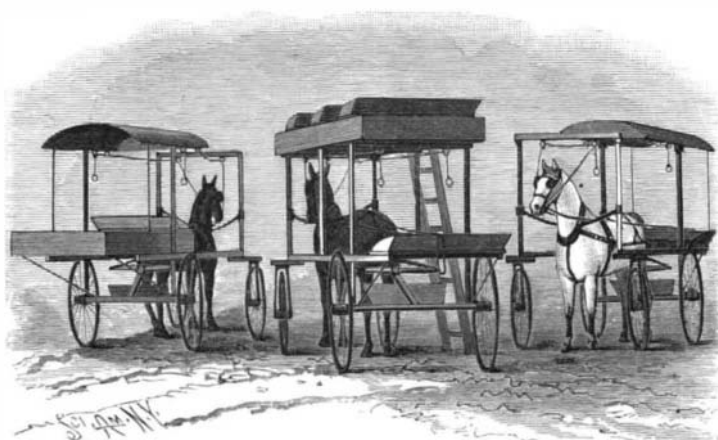
The Secretary of Agriculture has directed the Chief of the Weather Bureau to move the headquarters of the present West Indian storm warning service from Kingston to Havana, to establish complete meteorological stations at Cienfuegos and Port au Principe, and as rapidly as possible to extend the climate and crops service of the Weather Bureau over the island, so that within a period of not more than two months complete information can be given of anything meteorological and agricultural in various parts of the island, and reports will be made as to the progress of the rehabilitation of the industries which during the recent strife were either suspended or completely annihilated. The Secretary of War has been requested to assign buildings and grounds for the headquarters of the service in Havana. The cost of the entire United States Weather Service in the West Indies, including observatories on the north coast of South America, will probably be much less than was expended by Spain in maintaining inefficient and almost useless meteorological service over the island of Cuba.

Some months ago the Chief of the Weather Bureau began the establishment of a complete climate and crop service in the island of Porto Rico. The Weather Bureau system of gathering crop and meteorological reports has now been so well extended throughout the island that it is thought by the first week in January a full crop report showing the conditions of the crops in all of the provinces of the island will be published for the benefit of interested parties in the island and in the United States, and this service will be continued weekly.

How Santiago Was Cleaned.

Robert P. Porter, special commissioner for the United States to Cuba and Porto Rico, in his report to the Secretary of the Treasury, tells what he saw in recent visits to those islands. Speaking of improvements made at Santiago, Mr. Porter states that the disagreeable smells of the typical Cuban city are less pronounced in Santiago, while whitewash, limewash, fresh paint, and all sorts of disinfectants have deodorized the surrounding atmosphere and made the old town quite habitable. The streets are no longer used as sewers, and the unhappy individual who may violate the law and who escapes the lash of the sanitary commissioner's whip is compelled to work on the street for thirty days. Sanitary Commissioner Barbour has under him one hundred and twenty-six men dressed in spotless white and thirty-two mule teams and carts. This force of men have dug out from the streets the filth of ages, and they are now kept absolutely clean. By the aid of petroleum the garbage of the day is burned. The work of sanitation is not confined to the streets, but

extends to the dwelling houses and other buildings. In many cases the doors of houses had to be smashed in and the people making sewers of the thoroughfares were publicly horsewhipped in the streets. These measures were drastic, but were entirely warranted by the flagrant carelessness of the people. Some of the most respectable citizens were haled before the com-



A CONVERTIBLE VEHICLE.

manding general and sentenced to aid in cleaning the streets they were in the habit of defiling. The campaign has resulted in a complete surrender to the sanitary authorities, and the inhabitants of Santiago have had their first object lesson in the new order of things which came with the close of the war.

AN AUTOMATIC ACETYLENE-APPARATUS.

An acetylene gas-generator has recently been patented by Milton D. Keiser, of Mitchellville, Iowa, in which the gasometer, coacting with a water-filled pressure-tank, is made to flood the generating-chamber according to the volume of gas required.

The apparatus comprises essentially a large pressure-tank containing water, and a smaller gasometer-tank connected with generating-chambers. Both tanks communicate with each other and with a common blow-off chamber. A pipe leading from the gasometer to the bottoms of the generating-chambers supplies the carbide with water. The gas formed rises and is conducted to the gasometer by a pipe leading from the generating-chambers. Within each generating-chamber two or more perforated carbide buckets are placed, one above the other, the purpose of this arrangement being to prevent the simultaneous contact of the water with all the carbide, as well as to prevent the contact of the decomposed carbide with that which has not yet been acted upon.

The gas generated by the carbide passes into the gasometer, and is then distributed by a service-pipe. As the gasometer and carbide-chamber communicate with each other, the pressure in both must be the same. When the volume of gas in the generator decreases, the water from the pressure-tank causes the water in the gasometer to rise and to force the water in the bottom of the generating-chambers into contact with the carbide. The gas thereby generated, upon entering the gasometer, depresses the water therein, and withdraws



KEISER'S AUTOMATIC ACETYLENE-APPARATUS.

the water from the carbide, thus stopping the further generation of gas. By these means the apparatus acts automatically to regulate the generation of gas. The pressure-tank coacts with the gasometer to control the gas-pressure. Should the pressure become excessive, the surplus gas is blown off by means of the blow-off chamber and vent pipes.