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[IN ADVANCE.]

Improved Wind Mill.

It must have been at a very early period when the attention of men was first directed to the employment of the wind as a motor. Its force being so evident to the senses, there is little doubt but it was one of the first means which man employed as his servant. The lack of regularity in its motion, and the entire failure of motion in a calm has however driven it from competition with steam or water, as a motor for manufacturing purposes where steadiness and reliability are requisites. Still, for some purposes and in some situations, the wind mill is cheaper and as useful as any other motor. The attacks of prejudiced advocates of mechanical progress on this old-fashioned machine have proved as futile as those of Don Quixotte, and the wind mill still holds its own as a valuable adjunct of man's efforts. The dyked level of Holland is thickly studded with these machines employed in raising water, and for this purpose, the wind mill deservedly continues to hold a high position. In this work continuity of operation or steadiness of motion is not very important, as the results of the work performed when the wind blows can be stored up for a season of calm.

A number of wind mills of varying construction have been introduced, but some of them have been planned apparently by men whose ideas on the action of the wind were somewhat crude, and their machines have been in some cases cumbrous or complicated and more or less liable to get out of order. The mill shown in the engraving is the production of a mechanical engineer who has devoted many years to the study and construction of wind mills, and it appears to have been planned on sound mechanical and scientific principles. It is conceded by good authority that the vertical wheel, like that in the engraving, gives out a much larger amount of power than one of the horizontal style does for the amount of surface exposed to the action of the wind; and this is, therefore, the plan of the "Sancho Panza."

The arms carrying the wings are seated in a cast iron hub and braced at their extremities by rods passing from one to the other, and also by others to a collar on the end of the horizontal shaft. From the wings extend other rods which connect with the arms of a "spider" turning loosely on the shaft and made to slide on it. The wings are pivoted to the radial arms so that they can be turned to present their surfaces at angle more or less acute according to the force of the wind. From the "spider" pass rods parallel to the shaft, connected to a collar on the shaft to which connections are pivoted which, by vertical bars, are attached to a lever having a shifting weight. From this lever, rods extend down the upright and connect with another lever and rope, by pulling upon which the sails may be set to any angle desired or directed with their edges to the wind to stop the machine. By means of a crank, motion is given to a pump rod or to any other machinery.

The engraving represents a wind mill forcing water from a well into the upper story of a dwelling, filling a tank from which the water can be led to a bath tub, sink, or any other receptacle for domestic uses. The sails are at all times presented to the wind by the vane.

This mill was patented Feb. 19, 1867, by Frederick Hewitt, of Newark, N. J.

It is very strongly built, is cheap, and always under perfect control. There is no portion of it which cannot be repaired or replaced by any ordinary mechanic. It may be seen at J. D. West & Co's, 40 Courtlandt street, New York city, who will answer all inquiries relative to it.

A Curious Formation.

A London paper states that at a certain point in the Thames where an eddy accumulates a shoal of sand, agglutinating springs rise from beneath and progressively convert the sand into rock, which has to be removed, from time to time, by

blasting. Bourne, the engineer, conceived from this circumstance the idea of turning quicksands to firm foundations by a similar process, and actually proposed to do this for the railway bridge over the Soane in India. Quicksands at this point as deep as borings had been made, were to be converted into rock by injecting them, through perforated pipes, with sufficient iron water, from a hill of iron pyrites near at hand, to stick together the whole mass. The line of the road was eventually altered, and the bridge was built at another point;

on which the box turns. It is neat, handy, and convenient and will commend itself to every housewife.

A patent for this device was issued through the Scientific American Patent Agency August 21, 1866, to A. J. Walker, whom address at Lowell, Mass., for additional particulars.

Cause of Milk Sickness.

This pernicious affection of domestic animals is sufficiently mysterious and important to have induced the Legislature of Illinois, some years since, to vote a handsome reward to any one who should discover its cause. The *Medical and Surgical Reporter* gives information from three separate observers (one quoted from the *Missouri Republican*) tending to throw the responsibility upon a common and hitherto unsuspected plant, *Eupatorium Ageratoidis*. It is a coincidence, that two if not three of the discoveries were originally made in the same year, 1860. Mr. Wm. Jerry, of Edwardsville, Ill., in June of that year, gathered the plant by mistake for the nettle, and (alone) partook of it as boiled greens. On the next day he was suddenly seized with the usual symptoms of milk sickness, violent trembling, prostration and faintness, accompanied on the day after by vomiting, violent retching, and a fevered state of the stomach. He did not recover from these effects in five years, during which period he took pains to make himself acquainted with the plant which had caused them, and tried it upon animals with similar results. When in bloom, animals are said to like it.

Dr. Amos Sawyer, of Hillsboro', Ill., adds his testimony to the above. Mr. R. N. Lee, of Nokomis, had given him information of a plant with which he had repeatedly produced milk sickness in animals, and supplied him with a quantity for examination. His own experiments confirmed the report of Mr. Lee, and a botanical report by Dr. McPheeters, of St. Louis, coincided with that before procured by Mr. Jerry from Mr. Enno Sanders, chemist. The following

is the description: "*Eupatorium Ageratoidis* L. (white snake root), smooth, branching, three feet high, leaves broadly ovate, pointed, coarsely and sharply toothed, long petioled, thin (four to five inches long), corymbs compound." Mr. Jerry promises to try the plant further upon cows the coming season. Dr. Sawyer states that the milk sickness is caused only when cattle range in the woods, and that the disease is always confined within certain well defined boundaries.

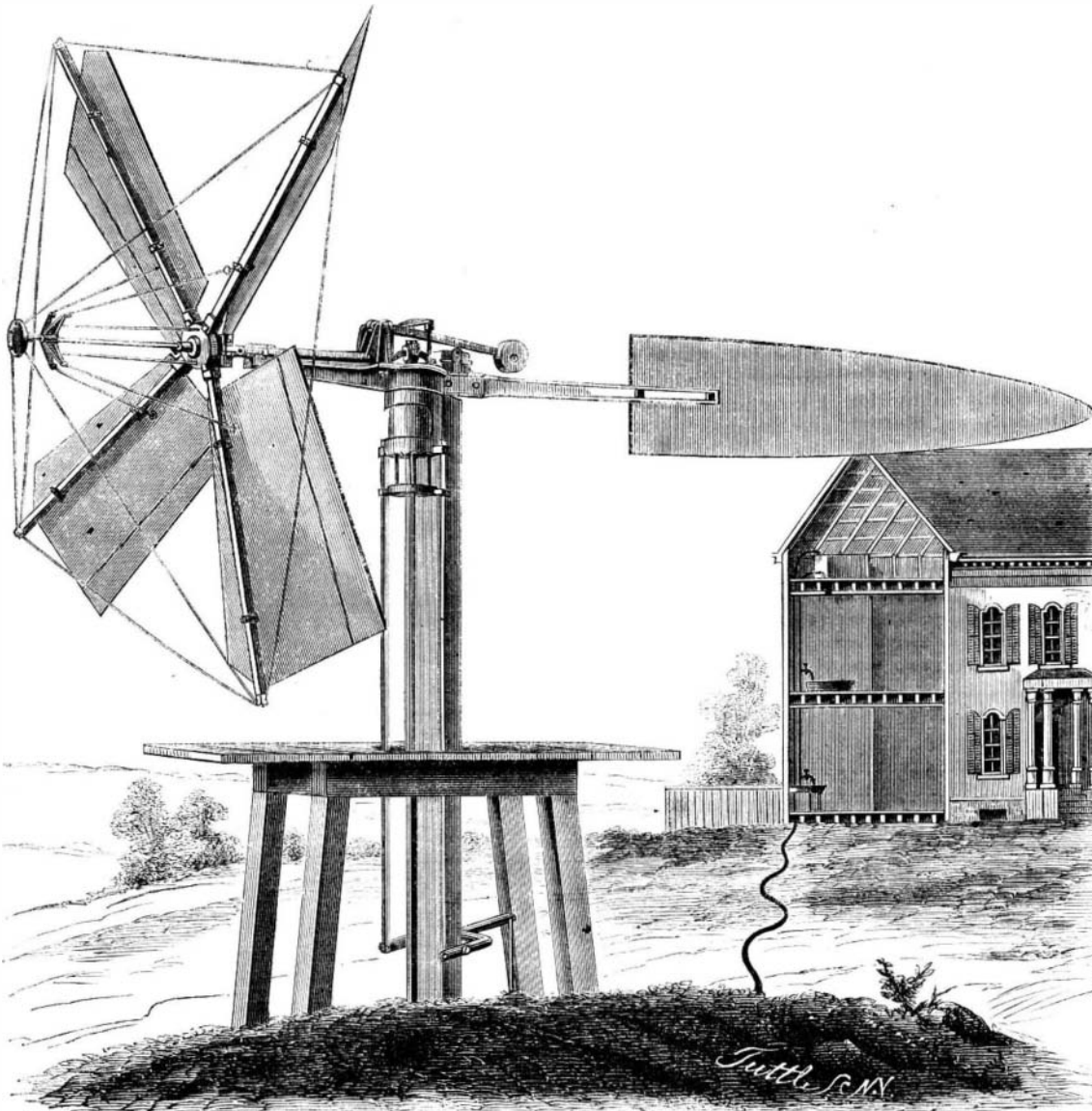
[From our Foreign Correspondent.]

LAST WORDS FROM ENGLAND.

LONDON, March 23, 1867.

THE ENGLISH DOCKS—THEIR "WHY AND WHEREFORE."

This letter will be my last from England, as I shall go to Paris next week to be present at the opening of the Exhibition. There are many things, however, of great interest, and that would afford material for study, which we have not been able yet to consider. Thus, it is proper that I should say a few words about the docks so generally in use here, since we have next to nothing of the kind with us, and every body has heard the praise of the Liverpool docks at least. The use of these is rendered almost imperative from the great rise and fall of tide which prevails all over Europe, but especially in the channels by which England is surrounded. At Liverpool this amounts to 25 feet, and at places in South Wales on the Bristol Channel the daily rise is 30 feet. This of course produces a very rapid current, which, added to the inconvenience arising from such a great change of level, would render loading and unloading vessels in the open stream a matter of some difficulty. The bottom is in general soft mud, and at low tide this is exposed in large banks, and vessels are in most cases high and dry upon these, presenting rather an odd appearance. But aside from any reasons of this nature, the

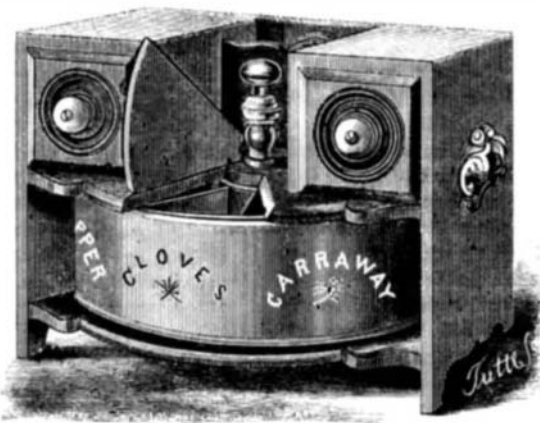


HEWITT'S SANCHO PANZA WIND MILL.

but Mr. Bourne still believes that an expedient of this kind will become a valuable feature in engineering.

WALKER'S IMPROVED SPICE BOX.

The prudent housekeeper is a lover of compactness and of conveniences for storing. The engraving herewith presented is that of an elegant combination cabinet for keeping the



spices and similar condiments used in the culinary art. It needs scarcely any description, as the engraving gives an excellent representation. A case of mahogany, black walnut, or other ornamental wood is provided with drawers at the sides under which is a rotating tin box in the form of a cylinder divided by radial partitions into eight compartments, each having the name of the spice it contains painted on its front. The cover has but one opening, that in the front, and the receptacle is rotated by the knob on the top of the stud