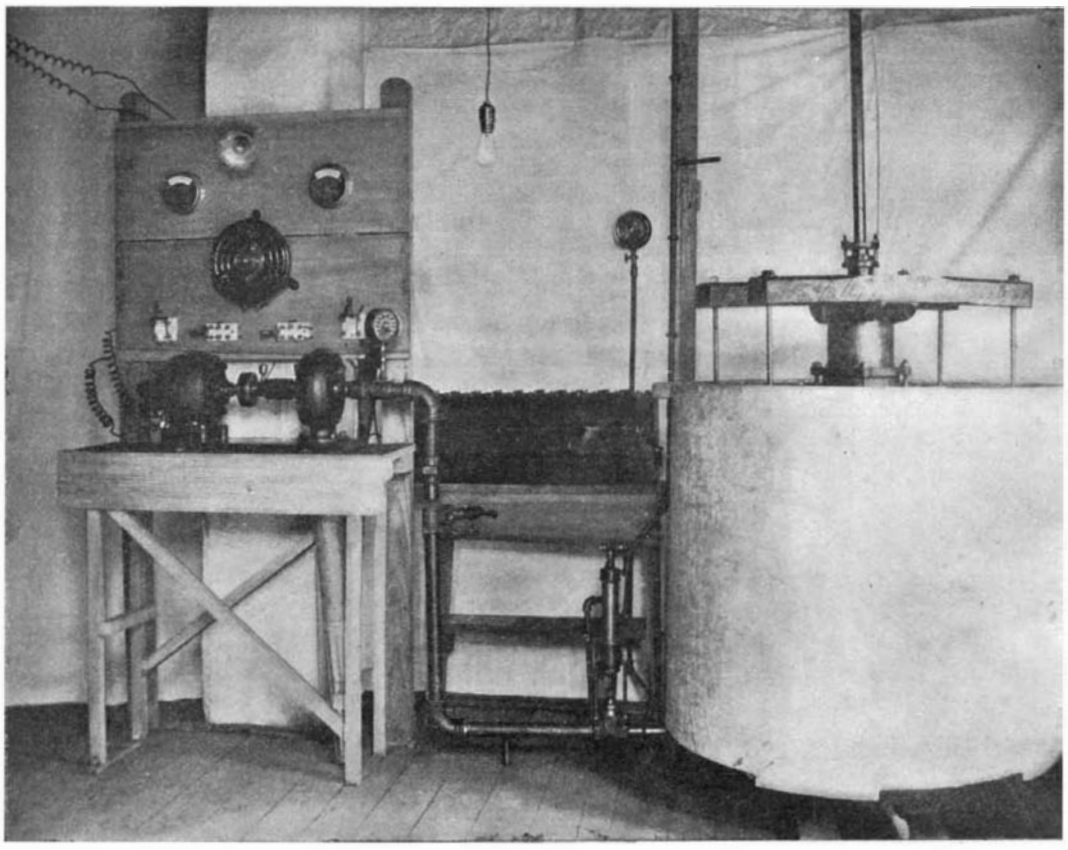
DOMESTIC ELECTRIC LIGHT PLANT DRIVEN BY A WINDMILL.

A windmill, in this country, at least, is seldom put to any work other than pumping water, for the reason that its power is so variable. From time to time the question has been raised of storing this erratic energy, so that it may be delivered at a uniform rate for various purposes. But the problem of storing the power has proved more difficult than might at first be imagined, and few really practical apparatus of this sort have been devised. However, Mr. R. W. Wilson of Noblesville, Ind., seems to have reached a successful solution of the question, at least as far as the requirements of his own home are concerned; for with the power furnished by his windmill, he operates a small electric light plant which illuminates his house and barn. The windmill is of the usual type adapted for pumping water. It stands on a tower 50 feet high, and operates a force pump of 12-inch stroke with cylinder 3½ inches in diameter. The water is pumped to a regulator, situated in the basement of the building. This regulator consists of a cylinder in which a heavily-weighted plunger is fitted. When the cylinder is filled with water, the rising plunger strikes a catch which opens a valve in a pipe communicating with a water motor. The water motor is direct-connected to a dynamo which, in turn, generates the electric power necessary to energize the lighting system. A storage battery is provided to store any excess of current, or to store the entire output of current when the lights are not in use. An automatic switch connects the dynamo with the storage battery, so that when the dynamo stops or runs very slowly, the current from the battery will not operate back through the generator. Owing to the weight of the plunger in the regulator, the water motor is under an almost constant pressure. When the plunger reaches the bottom of the cylinder, it strikes a trip, which closes the valve in the pipe running to the water motor. The action of the motor is thus rendered intermittent. The storage battery comprises eleven cells, which store sufficient current to supply Mr. Wilson's home with light for six or seven days, so that in case the wind should die out for several days, he would still have sufficient current for all his needs. One of our illustrations shows a section of the building and the pumping system. This arrangement differs somewhat from the system which Mr. Wilson has actually installed in his building, in that the electric apparatus is situated in a kitchen in place of the basement. The advantage of this is that sufficient head is provided to conduct the water from the motor to a trough in the yard, where it may be used for watering stock.

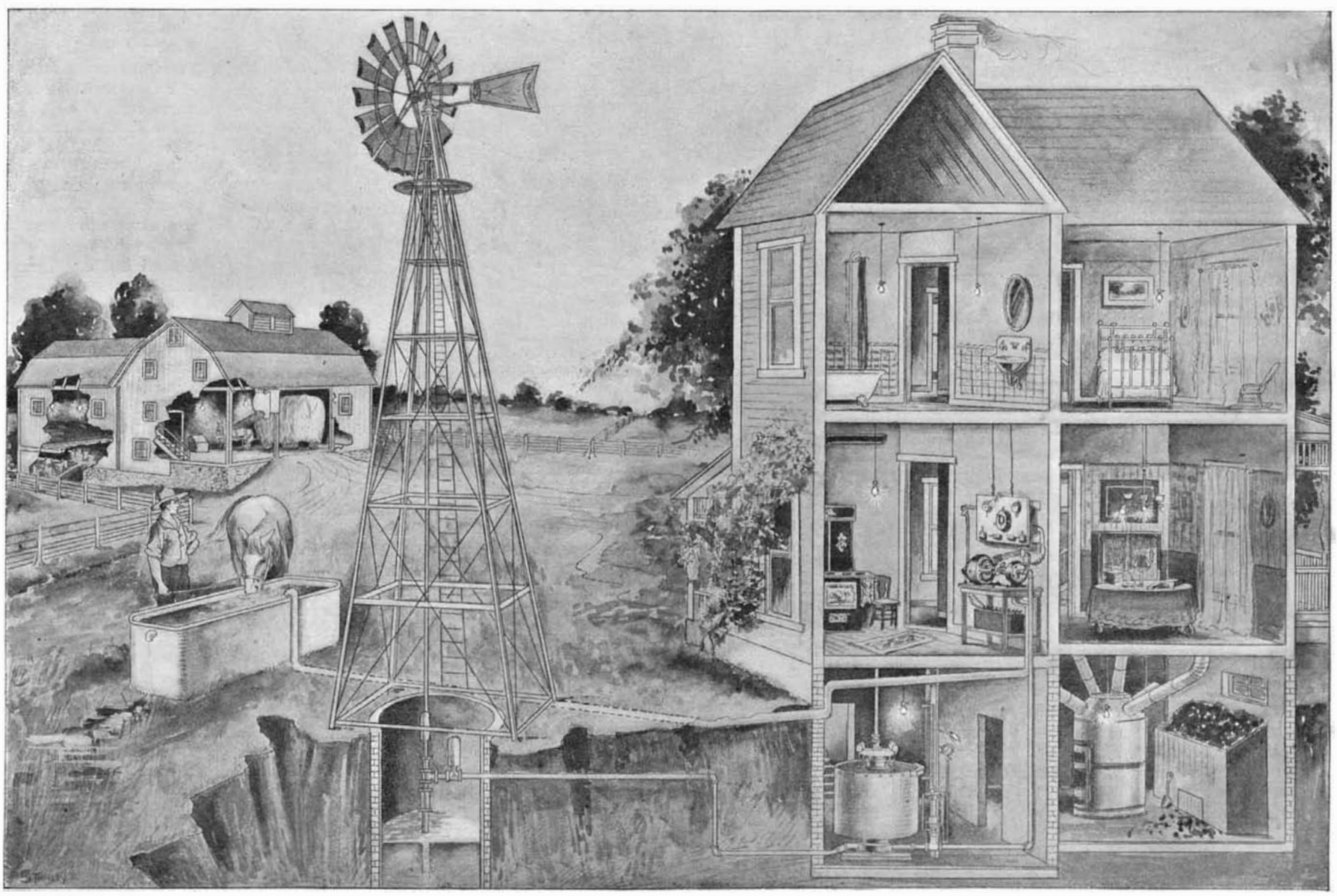


Complete Lighting Set Consisting of Regulator, Water Motor, Dynamo, and Storage Battery.

Arrangements are being discussed for an electrical exposition at Niagara Falls in 1908.

A New Textile Fiber.

A vegetable fiber obtained from the dwarf palm tree now forms one of the staple products of the Algerian region, and the industry has lately taken a great extension. The dwarf palm was heretofore considered as having no value for commercial use, and even as a harmful plant, but owing to the method of extracting the fiber from the plant which is now so successful, the use of the product is on the increase and it can be employed to advantage to replace the animal fiber or hair which is so extensively used for mattresses, woven products, harness and carriage work, and these industries are now commencing to use it and are placing large orders for the fiber. Besides this, the railway companies both in France and elsewhere on the Continent are beginning to employ the fiber for military bedding purposes. While horse hair appears to be easily attacked by moths, the fibers of the dwarf palm resist the attacks of insects; and besides the above uses for it, we may also mention the manufacture of various tissues and even of hats. Algeria seems to have the monopoly of the fiber industry for the present. The natives collect the raw material, consisting of the leaves of the dwarf palm, and bring them to the factories. Here there is installed a carding apparatus, the old method being to work it by hand, but recently a form of steam carding machine has been used, and it gives much better results. By this process the leaf is transformed into vegetable fiber, which is afterward spun and braided, this being done generally by hand. In the primitive state the vegetable fiber is valued at $9 to $12 per ton. When it is dyed in black, the price is very nearly doubled. In Algeria there are already a number of these factories, which are scattered in different localities. The department of Algiers has the best plants and is thus able to manufacture a superior quality of fiber. Cords which are made from it are remarkable for their length, flexibility, and elasticity.



The Water Pumped by the Windmill is Delivered Through a Regulator to a Water Motor Which Drives the Electric Generator.

DOMESTIC ELECTRIC LIGHT PLANT DRIVEN BY A WINDMILL.