

WILSON'S "HOROGRAPH," OR CLOCKWORK PEN.

Mr. Edison's remarkable electric pen has brought to mind a stillborn effort of like character dating back eighteen years. Mr. Wilson, of the firm of Messrs. Newton, Wilson & Co., London, then conceived and worked out the idea of a pen that was operated like a fretwork machine, for marking designs on work for the sewing machine. For some reason or other, but chiefly, no doubt, because of the requirement that the work had to be passed under the pen, in sewing machine fashion, nothing came of the Wilson pen invention. It passed into oblivion, to be immediately revived, however, on the mention of the discovery of Mr. Edison. Mr. Wilson now set himself to the easy task of importing into his previous pen (which, technically speaking, would be the original patent pen) the portability of the Edison electric pen. The Wilson pen is wound up by a sort of watch movement, and its running down action may be utilized on a sheet of paper anywhere. When it is wound up it does not act at all, unless there is a slight pressure of the thumb on the controlling key. It needs no battery to keep it going. The Wilson and the Edison pen have a similar needle, perforating sheets of paper with minute holes, instead of lines; the holes thus made forming writing, or drawing, or design, at the pleasure of the writer. The perforated sheet is called a stencil, and this is put upon a blank sheet of paper. It now only remains to pass an inked roller over the stencil, when a beautiful impression will be made upon the blank sheet beneath, and upon any number of blank sheets that afterward may be submitted to the process. It is said that as many as 300 perfect impressions may be printed from a single stencil in an hour, and that a single stencil will readily yield 10,000 copies.

The Pneumatic Clock.

In describing the pneumatic clocks at the Paris Exhibition the SCIENTIFIC AMERICAN gave the credit of their invention to Mr. Mayerhofer, an Austrian engineer, and the merit of perfecting them to Mr. Victor Popp. In a letter, dated March 22, Mr. Mayerhofer begs to have the entire credit restored to himself. He says that the invention was made by him in 1864, but not publicly exhibited until 1875. After many delays and disappointments he succeeded in getting from the City Council of Vienna permission to set up the system in that city, on trial for one year. The cost of this experiment made it necessary for Mr. Mayerhofer to seek financial assistance, which was gained by association with Messrs. Resh & Popp, who undertook the business part of the enterprise. The construction and management of the clocks, however, fell entirely to Mr. Mayerhofer, to whom the perfection of the system is wholly due.

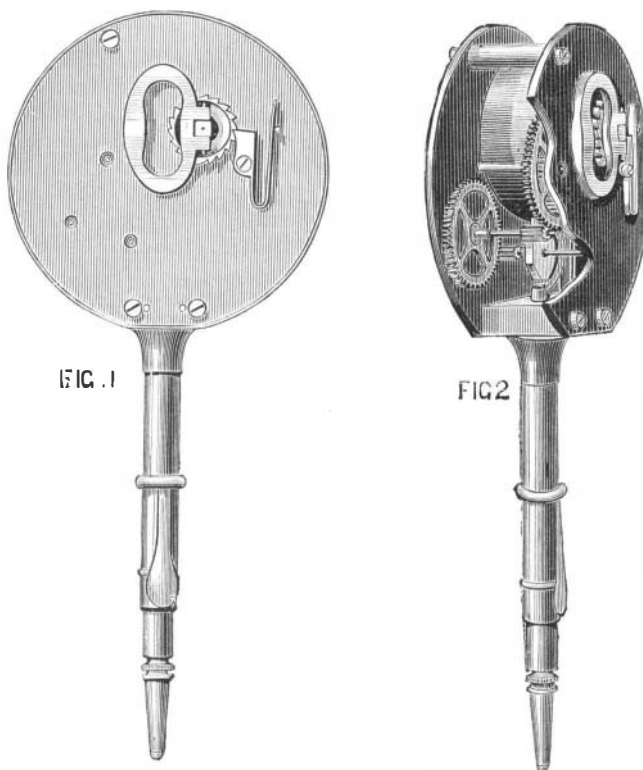
RECENT DISCOVERIES IN ASSYRIA.

In the course of the last summer Mr. Hormud Rassam, a Syrian scholar, made some very interesting discoveries at Balawat (nine miles from Nimroud), on the site of the ancient Nineveh. Mr. Rassam set out last year on the joint expense of the British Museum and the *Daily Telegraph*, and brought back with him most interesting collections.

Balawat was formerly a fortified Assyrian town, but now little more than the ruins of the walls remain. This city has had different names during the reign of Assur-nasir-pal, the father of Shalmanezar II. Although situated but a short distance from Nineveh, it was conquered by the Babylonians before the fall of the Syrians. But when Assur-nasir-pal succeeded to the throne he rebuilt the town and called it In-gur-Beli. The great soldier built a temple for the god of war in the town. These facts are inscribed on some alabaster tables found by Mr. Rassam in a chest of like material, near the portico of the destroyed temple. The inscriptions describe some special event of the obscure periods of Assyrian history.

The ruins of the temple are situated in the north of the ancient village near the ramparts. By making excavations on this spot, Mr. Rassam brought to light two large bronze plates which have singular forms engraved on them. These bronzes were immediately sent to London, where they were received with the greatest enthusiasm by the Director of the British Museum. The rust and earth which thickly covered the same were then removed, and a trial was made to dis-

cover that which had been well preserved. It was soon found that they were remnants of a rectangular door which turned on pivots. Judging from the nails that have been found, the body of the door must have been of wood, about ten centimeters thick. The designs are in high relief, and represent the combats of Shalmanezar, his victories and his triumphs, the tortures inflicted upon the prisoners, and his adoration of the gods. These new documents relate of his campaign against Babylon, and also his expedition to the Mount Araval and his triumph over Akhuni, King of Borsipa.

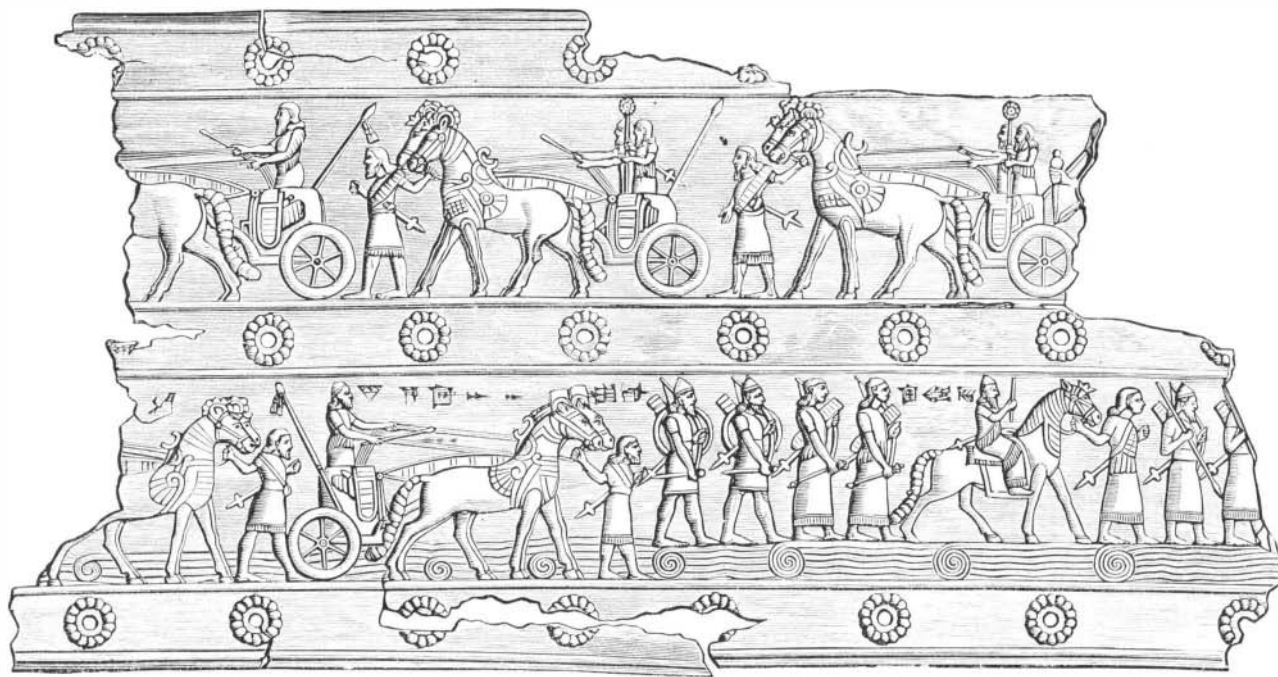


FRONT AND SECTIONAL VIEWS OF THE WILSON CLOCK PEN.

Our engraving represents one of these plates. The king is seen on the march with his army. The warriors stand on war chariots similar to those of the Homeric heroes during the siege of Troy. The horses are led by valets, and the king is represented on horseback, and wears a flowing robe and a cape. He is preceded and followed by his eunuchs. The men carrying the bows and arrows are crossing the Tigris. The other panel shows the king sacrificing before an altar. The captain of the guards is standing behind him, and the soldiers carry an ox and a ram which are to be sacrificed. The chest found by Mr. Rassam contains tablets having hieroglyphic engravings, from which the whole history of the reign of Assur-nasir-pal can be read.—*From Le Monde de la Science et de l'Industrie.*

The Latest Telephone.

At a recent meeting of the Society of Telegraph Engineers



RECENT DISCOVERIES IN ASSYRIA.

in London, an interesting feature was the disclosure made by Major Webber, R.E., to the effect that he had recently experimented with a remarkable new carbon telephone from America, which owed its power to a diaphragm of animal tissue. With this instrument, which was not further described, Major Webber was able to speak in a low tone over 70 miles of wire with perfect clearness. A part of this line consisted of underground cable, in which from 20 to 30 other circuits were busily at work without interfering with the telephonic message. The voice of this instrument was singularly full and life-like, whereas that of magneto-telephones is peculiarly thin and parrot.

Clarification of Water.

Well waters sometimes contain vegetable substances also of a peculiar kind, which render them unwholesome, even over large tracts of country. In sundry districts the decaying vegetable matters of the surface soil are observed to sink down and form an ochreous pan, or thin yellow layer, in the subsoil, which is impervious to water, and through which, therefore, the rain cannot pass. Being arrested by this pan, the rain water, while it rests upon it, dissolves a certain portion of the vegetable matter, and when collected into wells, is often dark colored, marshy in taste and smell, and unwholesome to drink. When boiled, the organic matter coagulates, and when the water cools, separates in blocks, leaving the water wholesome and nearly free from taste or smell. The same purification takes place when the water is filtered through charcoal, or when chips of oak wood are put into it. These properties of being coagulated by boiling, and by the tannin of oak wood, show that the organic matter contained in the water is of an albuminous character, or resembles white of egg. As it coagulates, it not only falls itself, but it carries other impurities along with it, and thus purifies the water—in the same way as the white of egg clarifies wines and other liquors to which it is added.

Such is the character of the waters in common use in the Landes of the Gironde around Bordeaux, and in many other sandy districts. The waters of rivers and of marshy and swampy places often contain a similar coagulable substance. Hence the waters of the Seine at Paris are clarified by introducing a morsel of alum, and the river and marshy waters of India by the use of the nuts of the *Strychnos potatorum*, of which travelers often carry a supply. One of these nuts, rubbed to powder on the side of the earthen vessel into which the water is to be poured, soon causes the impurities to subside. In Egypt the muddy water of the Nile is clarified by rubbing bitter almonds on the sides of the water vessel in the same way.

In these instances the clarification results from the iron compounds or the albuminous matter being coagulated by what is added to the water, and in coagulating, it embraces the other impurities of the water, and carries them down along with it. Salt and many saline matters have likewise the power of clearing many kinds of thick and muddy water. So long as the water contains but little dissolved matter, all its particles of mud remain a long time suspended. But the addition of almost any soluble salt, even in small proportion, will, as it were, curdle the impurities, causing them to collect together and settle. These cases, and especially that of the sandy Landes of Bordeaux, and elsewhere, throw an interesting light upon the history of the waters of Marah, as given in the fifteenth chapter of Exodus: "So Moses brought Israel from the Red Sea, and they went out into the wilderness of Shur; and they went three days in the wilderness, and found no water. And when they came to Marah, they could not drink of the waters of Marah, for they were bitter; therefore the name of it was called Marah. And the people murmured against Moses, saying, What shall we drink? And he cried unto the Lord, and the Lord showed him a tree, which when he had cast into the waters, the waters were made sweet."—*Chemistry of Common Life, Church.*

Southern Alaska.

William H. Dall, explorer and naturalist, describes that portion of Alaska lying east and southeast of Mount St. Elias as a region covered with dense forest, canal like arms of the sea penetrating everywhere and teeming with fish as the islands do with game. The mean annual temperature is about that of Central New York,

with a wetter and cooler summer and a very mild winter, the thermometer reaching zero only once in ten years. It is a paradise compared with the alkali flats of Utah, the burning sands of Yuma, or the monotonous and dreary prairies of the Rocky Mountain cattle region. Nor are its advantages solely relative. It has long been proved by actual experiment that potatoes and many other vegetables do well there, and grasses (if not grain) come to great perfection. In that region one never need lack food, and a small investment of capital is all that is needed to make a really comfortable home, were communication kept up regularly with the rest of the world, and protection against violence in-