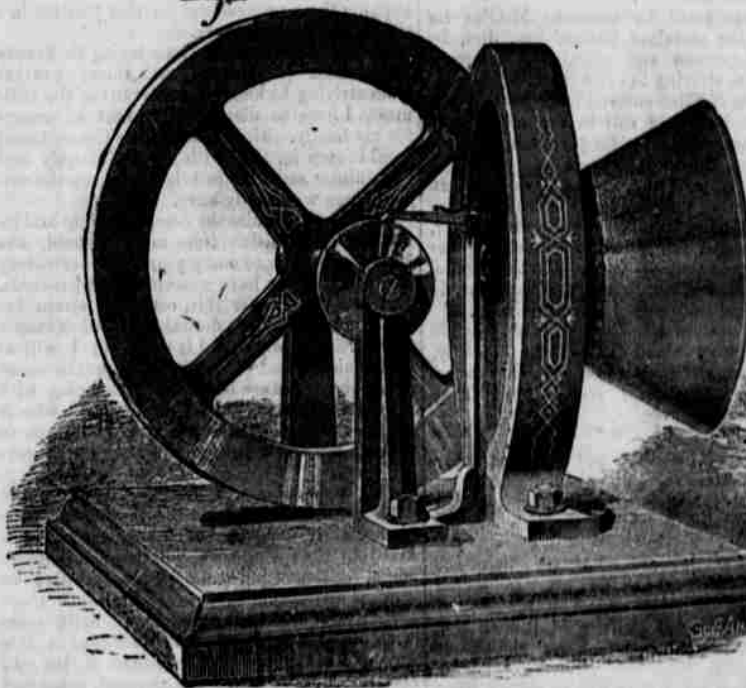


THE PHONOMOTOR.

The phonomotor is a machine in which the vibrations produced by the human voice are applied so as to produce visible motion. The vibrations are allowed to first produce corresponding vibrations in a regular phonograph diaphragm (as shown in the figure). By means of a piece of rubber tubing placed against the diaphragm, the vibrations are then transmitted to a spring, which in turn vibrates in unison with the diaphragm, and thus with the voice. To the spring is attached a pawl. If any of the uninitiated do not know what a pawl is, they may be referred to the capstans of steamers. Those little hinged irons that, when the capstan has been turned a few inches, fall down with a click, and prevent the capstan from turning back again, will give one a very good idea of what a pawl is. The pawl on the phonomotor spring rests on the edge of a notched wheel.

Fig. 1



When the vibration of the voice vibrates the diaphragm, which in turn pushes the spring out, the pawl catches in a notch of the wheel, and pushes the wheel around a distance corresponding to the distance the spring vibrates. When, in its vibration, the diaphragm goes back, the spring goes back also, and with it the pawl. The pawl, in returning, catches on one of the other notches, and when the diaphragm comes forward again, the spring is ready to push the wheel around still further. So the phonomotor, with the power exerted by the voice alone, the wheel may be set into quite rapid motion, and after a careful series of experiments with this new invention it will become possible to measure and compare voices with regard to their strength and pitch.

The engravings on this page, which are taken from the *Scientific American*, show how simple the contrivance is. Fig. 1 shows the phonomotor displayed so that all its mechanism appears. Fig. 2 shows the way in which the sound is applied to produce the motion.

NO STIMULANTS.—The Doctor says that the other day a physician, to a patient inquiring, "What ought I to take or to do when my feelings of exhaustion come on?" replied, "Go and lie down like any other beast."

COCOANUT OIL MANUFACTURE.

The Alameda Oil Manufacturing company is extensively engaged in the manufacture of oil from cocoanuts. It has a line of schooners running between this port and the South Sea Islands which bring at regular intervals cargoes of the cocoa. The fruit is gathered when ripe, by the natives, and the outer husk and shell being stripped off, and the meat broken into small fragments, it is packed in sacks and ready for shipment. Previous, however, to its packing, it is thoroughly dried in the sun, and thereby undergoes a process by which the fibrous matter is to a certain extent loosened, rendering the oily substance more easy for extraction.

The process of manufacture is similar to that used in the production of cotton seed oil. The cakes are first ground into a meal, then placed in sacks, about 10 inches wide by 24 inches long. These are placed in numerous compartments of a hydraulic press, and submitted to a

THE TELEMACHON.

Since Mr. Edison's wonderful inventions have been brought forward, the country has been seized with a desperate hankering after the wonderful and the popular interest and inventors' hopes run high. So much is said of astonishing matters in the Eastern daily papers, that one hardly knows what to believe and what to laugh at. We read that at Ansonia, Conn., William Wallace is experimenting with a new electrical machine. He calls it the telemachon, and claims that by it, when perfected, power can be transmitted hundreds of miles through an ordinary cable. For instance, a steam engine in Scranton, Pa., could be connected by a cable with a factory in New York and the latter be run for the cost of the cable and the greatly decreased cost of coal in Scranton. With this new invention working as it is claimed it will, the cities near the coal mines would become vast centers of power filled with engines sufficient to run all the factories of the

Fig. 2



ONE OF EDISON'S LATEST—THE PHONOMOTOR.

pressure sufficient to extract the oil. The residue, in the form of cakes, is especially adapted to feeding stock, containing highly nutritive qualities. The oil is used at present for lubricating purposes, and also in the manufacture of soap; but there is no reason why it cannot eventually be refined to the extent of producing from it a palatable salad oil. This company is established at Alameda Point, and very little is known, generally, of the enterprise. The islands furnish this commodity to various countries of the world, Australia and California being the largest consumers, and an income of no inconsiderable amount thereby accrues annually to the natives. The Marshall and Gilbert groups furnish the largest amount.—*Mining and Scientific Press*.

HEAT CONDUCTIVITY.—Experiments lately made by M. Schuhmeister on the heat conductivity of cotton, wool and silk, by a method similar to that employed by Stefan for determining the conducting power of gases, have led to the following results: The heat conduction of air being considered = 1, that of cotton is (on the average) = 37, sheep's wool = 12, and silk = 11; the cotton and the wool were unwrought. The latter was washed merino wool; the silk was in the state of cocoon fibers.

Middle States at one-half the present cost of fuel. Mills would be filled with whirling spindles and rattling looms hundreds of miles away from the engines that run them. Only a small wire cable entering a building would show the source, though hardly the philosophy, of the transmitted force. The possibilities of the invention go further. The cable can be tapped like a telegraph wire, so that one continuous cable can do the whole work of the country, provided there is power enough at the starting point.

These are the possibilities of the telemachon as developed by Wallace. But Edison has been down to Ansonia and discovered still greater possibilities. He is confident that not only can power be transmitted by the telemachon, but that light and heat can be created by it. This would do away with the use of coal almost entirely. Great mills could be run by Niagara through the instrumentality of the telemachon, and lighted and heated by the instrument itself. The displacing of manual labor by the one would thus be more than made good by the decrease in the cost of living brought about by the other. In other words, the problem of physical life and action would be solved, and the world would make a stride of countless centuries towards the millennium.