

rapidly invested, and money made in thus increasing the usefulness of electricity, at the same time adding to the general sum of human convenience and happiness.

But since there happens to be a very large proportion of the human race which has not yet entered upon the stern conflicts and the troubles of life, "the little men and little women," our children, still to be considered and catered for, it is not to be wondered at that they, too, are to have a share in the wonderful achievements of modern electrical science—with what success to the caterers, a glimpse at the bustle and stir going on day after day in several electrical factories where this class of work, electrical toys, is being wrought, will convince.

Prominent among these companies is the Electro Novelty Co., whose well-equipped factory is on Knapp Street, Boston, whose specialties are "Simplex" electric engines and toys of various kinds to be operated by the same.



This company has been organized by gentlemen well known in the electrical field, and the devices they are manufacturing have been designed by them.

The Simplex electric engine may be considered the foundation of their business, for by its use all the other devices are operated. It is a diminutive motor operated by a primary battery of quite unique design, enclosed in the pliuth or bed plate on which the engine stands.

Fig. 1 shows this little engine slightly tilted up from the bed plate, being secured at one end by a pair of hinges, and showing the principle of construction adopted in making the battery. As will be seen, the carbon and copper plates lie in the shallow dish or saucer submerged in the necessary solution, contact being made by means of brass springs, as shown

under the engine. Though the dish, or cell, as it should correctly be called, is very shallow and the carbons and zincs flat and thin, with one charge of solution the engine will run for five hours. The design of the motor or engine, as will be seen, is somewhat similar to certain well-known types. The field magnets are elongated castings standing on end, the poles being towards the bottom of the magnets. The armature revolves in a field near the bed plate, thereby insuring stability in running. At the end of the armature shaft is secured a pulley of small diameter.

So finely constructed are these small engines, that for most purposes the driving belt is little more than a piece of ordinary black sewing thread, which is strong enough to operate the mechanical figures which may be connected.

Fig. 2 shows such a figure. It is that of a Japanese maiden strumming on a guitar. The right arm of the figure is loose at the shoulder and connected with a slender crank on the pulley round which the driving cord runs. When in operation this arm has the natural movement of a real live player. As will be seen in this cut, the speed is regulated by a countershaft and pulley, though many of the toys are operated directly from the driving wheel on the end of the armature shaft.



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The company has quite a large variety of funny mechanical figures which are thus operated, and for which there is setting in an enormous demand from all parts of the country. They provide unlimited amusement for the children; and even adults cannot always restrain themselves from smiling as they watch the violin playing of a cat, the wry faces of an industrious cobbler as he stitches away at a pair of boots, as the irrepressible drummer raises his hat with one hand, shakes his customer with the other, and seems to be asking in the blandest manner for an order, the butcher chopping sausage meat, etc.