

ELECTRICITY IN THE HOUSEHOLD.

In this, the electrical age, no new house is considered complete unless it be fitted with electric lighting circuits, whether the owner intends to use electricity or gas as an illuminant. And yet the incandescent lamp has been in practical use but little over a score of years. But aside from its utility for illuminating a building, and for running an electric fan, the electric circuit offers many other advantages which the public is only just beginning to appreciate. The accompanying illustrations show what a variety of uses the electric current can serve in an up-to-date home. The fatiguing treadmill operation of the sewing machine is done away with and the work is performed by a little electric motor about a foot high and six or seven inches broad, which gets its power from the ordinary lighting circuit and, changing this to mechanical movement, transmits it to the sewing machine through a friction wheel bearing on the starting wheel of the machine. The speed can be very delicately regulated by means of a small lever and the machine can be as quickly started or stopped as by foot power. As shown in our illustration the operator can assume any easy, comfortable position, as the only duty required is to steer the cloth under the needle. Even an invalid can safely operate a machine thus driven.

The electrically-heated flatiron shown in another illustration possesses the advantages of maintaining an even temperature which continues as long as the device is connected with the electric circuit. The iron heats up in a few minutes and is very handy especially for occupants of flats and apartments in laundering small articles. It is also particularly useful for pressing a crease in a pair of trousers and smoothing out the wrinkles in a coat and vest.

One of our illustrations shows an electric "hot-water" bag, which might better be termed "hot-wire" bag, for instead of being filled with hot water, it contains coils of fine flexible wire which are heated on passing the current through them. The bag heats up in five minutes, and as is the case of the electric flatiron it possesses the advantages of yielding a uniform degree of heat as long as it is in use. This is certainly a long step in advance of the hot-water bags now commonly used, which have to be refilled with hot water every fifteen or twenty minutes, and even then a uniform heat is not maintained.

Electric curling-iron heaters are to be found on the dressing tables of many fashionable hotel bedrooms. They are small and neat and they work automatically. The slipping of the iron into the heating chamber turns the current on and the withdrawing of the iron turns it off. They are popular because they do away with black smears of soot that the heating of a curling iron in a flame of gas occasions.

The electric chafing dish shows still another use of electricity in the home. It is really a small stove which can be regulated at will to give the desired intensity of heat. A traveler will find this stove particularly useful. It can be carried in the overcoat pocket and in a hotel room, on a train, on board steamer, or wherever electricity is available the little stove can be set up and used for preparing coffee, tea, Welsh rarebit, etc.

Aside from the electrical devices illustrated herewith, there are many others which are coming into practical use. Electric griddles, cake irons, toasters, cereal boilers, and coffee urns are but a few of the many devices which are now finding their way into homes equipped with electricity. None of these contrivances calls for more than three-quarters of a cent per hour to operate, and besides their cheapness, their cleanliness, and their handiness, they have the additional quality of absolute safety. Insurance companies recommend them and the insurance rates are lowered where they are in use.

New System of Measuring Criminals.

The police of London have introduced experimentally a new measuring system for recognizing criminals. As it has been successful, it will soon be adopted by a number of other police departments both in England and abroad. In this system only the impressions of

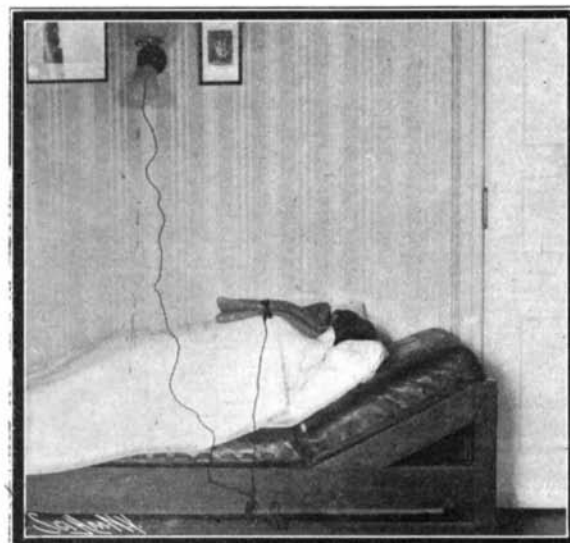


Sewing Machine Run by Electric Motor.

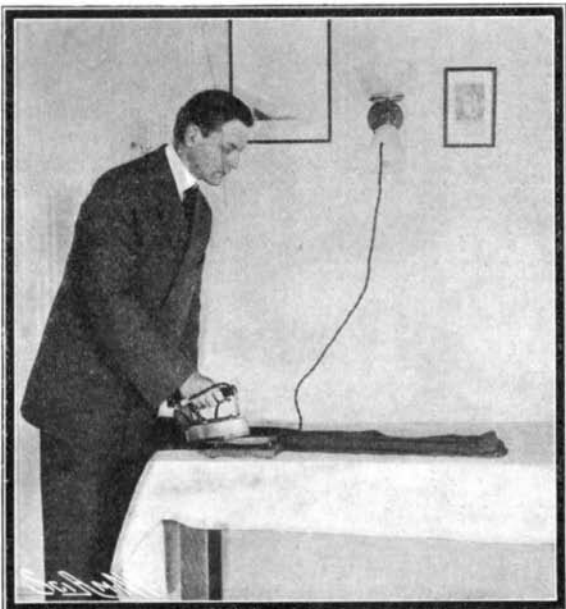
the fingers are taken. Compared with the Bertillon system, it has, above all, the advantage of simplicity, as it can be applied without any contrivances, and is, therefore, much less expensive. Whether it can completely take the place of the Bertillon system remains to be seen. The Berlin police have for the present also inaugurated a card collection of impressions of the fingers for recognition purposes. The new system is called "Daktyloscopy."—Richard Guenther, Consul-General, Frankfort, Germany.



The Electric Chafing Dish.



The Electric "Hot-Water," Bag.



Pressing With Electrically-Heated Flatiron.



The Electric Curling-Iron Heater.

OUR KNOWLEDGE OF THE MOON.*

Prof. Pickering's book on the moon, although essentially a popular work, is nevertheless an important contribution to the literature of a subject which has been made the object of ceaseless study even before astronomy had developed into a science. Based as the book is on very recent observations carried out by Prof. Pickering through the aid of Harvard University's observatory, and particularly on a splendid photographic atlas of the moon's surface prepared under Prof. Pickering's direction, it cannot but meet with the reception that it deserves. Astronomers who seek more technical information can find it in the Annals of the Harvard observatory; but the man who has a leaning toward science but who has not sufficient astronomical training to warrant a perusal of the more pretentious annals, will find here just what he needs—an accurate, and withal a confessedly popular account, of what astronomers have discovered on the surface of the earth's satellite. With this brief expression of opinion, we may be permitted to pass to a general review of the contents of Prof. Pickering's work.

Just what may have been the origin of the moon has been the subject of much speculation. The most currently accepted theory, however, is that the moon is supposed to have been originally part of the earth, and that in some way it has broken off from the parent mass. We are certain that when the earth was still a plastic mass the terrestrial day was much shorter than it is at present. As the original earth cooled, and contracted from its nebulous form, its rate of rotation must have steadily increased, and with it its centrifugal force. The powerful solar tides which then existed, however, did much to reduce this increase. The final period of rotation was shortened to about three hours. Gradually, the force of gravity at the equator became less and less. The solar tides in consequence became higher and higher. One day a cataclysm occurred, the like of which this earth has never seen before or since. Five thousand million cubic miles of material were hurled from the earth's surface by centrifugal force, never again to return to it. The somewhat fanciful suggestion has been made that the great depression occupied now by the Pacific Ocean indicates the spot which was filled by the moon, and that the eastern and western continents were cleft in twain when that great division occurred, floating like two huge ice floes on the denser, partly metallic fluid of the earth's interior. These huge depressions, when the surface had sufficiently cooled, were afterward filled with water, according to this theory, thus forming other existing oceans.

When did this separation of the moon and earth occur? It must have been rather recent in astronomical chronology. It is certain that the earth must have been already condensed from a huge gaseous mass to a comparatively solid or liquid form, very near its present size. The moon is probably one of the younger members of the solar system. Still, astronomers estimate its age at something like fifty million years.

When it first began its journey around the earth, the moon could not have been spherical; for the earth would not have permitted so large a body to retain its shape so near its own surface. The moon's present form was probably assumed after it had escaped to a distance of a few thousand miles, a distance that constantly increased and will continue to increase within certain well-defined limits. When our satellite has retreated to about 350,000 miles, the length of a lunar month will be increased to fifty of our present days; and our day will also have been increased fifty-fold. The earth and moon will constantly turn the same face toward each other as

* The Moon. By Prof. William H. Pickering. New York: Doubleday, Page & Co. 1903.