

for stirring up the liquid, held enough current to run the cautery for any ordinary operation, and could be recharged by means of half a dozen or a dozen gravity cells such as are used in the telegraph office. But even with the storage battery, there was the trouble of keeping the gravity cells in order, for they are eating themselves up continuously night and day, whether they are being used or not, and the repairing of them is dirty and expensive work. Still, by keeping the gravity cells in the cellar, and having them repaired and cleaned by the local electrician or telegraph operator, and by keeping the portable storage battery in the office always fully charged, the inconveniences were reduced to a minimum, the high first cost, about fifty dollars, being the strongest objection to it. During a recent visit to New York, such a storage battery outfit was seen in the office of Dr. Skene, the celebrated gynecologist of Brooklyn, who stated that it gave great satisfaction and was in constant use for the treatment of urethral caruncles.

Before incurring the expense of this installation the writer consulted Mr. Shaw, of the Montreal Electrical Works, 302 St. James street, Montreal, in order to see whether it was not possible to utilize the ordinary street current for the purpose. It seemed to the writer that if it would heat up a carbon wire to a white heat in a vacuum, it would just as easily heat up a platinum loop in the air. Mr. Shaw at once undertook to construct such an instrument, and in a few days the apparatus, as shown in the accompanying cut, was placed in the writer's hands, at a cost of twenty dollars. In this instrument, which only weighs a couple of pounds, the ordinary house cur-

rent of fifty-two volts is passed through a very long coil of rather fine wire and then goes back to the main. Owing to the resistance or holding back power of this long wire, a considerable quantity of electricity is stored up in the wire. If another long wire were coiled around this first one, having no connection with it, but on the contrary separated from it by a considerable space, this second coil would be charged with electricity of the same voltage, by reason of the induction—a quality which is unpleasantly noticed in the telephone wire when it passes near an electric light wire. By making the secondary coil of much shorter and coarser wire, the nature of the induced current is converted to one of much less voltage but of much greater amperage or quantity. This secondary coil is made to slide over the primary one so as to become more or less charged; by this means the quantity of current and the degree of heat in the cautery loop can be most delicately regulated to suit the various circumstances. There is no danger whatever either to the operator or to the patient, because the highly dangerous street current of one thousand volts is required by law to be reduced to the perfectly harmless and safe fifty-two volt current before it is allowed to be brought into the house. Or, more properly speaking, the one thousand volt current does not come into the house at all, a small portion of it only being abstracted by the iron boxes seen on the poles, and called converters, and which 52 volt current is in turn brought down to 2 to 6 volts by the transformer under notice.

This galvano-cautery is put in operation in the following manner: An electric light lamp is unscrewed from a socket and the wire from the coil attached by a similar

