



ELECTRICAL PROPELLER FOR BALLOONS.

Some experiments already performed show that the production of electricity may be prolonged :

1st. By agitating the liquid ; this is facilitated by employing communicating vessels ;

2d. By adding new quantities of bichromate of potash to the warm and wasted liquid ;

3d. By protecting the negative plate.

A battery of 18 elements, weighing 140 kilogrammes — the weight of two men — will probably furnish for over two hours a work of from one and a quarter to one and a half horse power, or the work of twelve to fifteen vigorous men. A similar battery with its motor may be easily carried by an elongated balloon of small dimensions and of small diameter, and offering in consequence little resistance to the air.

While testing the power of the battery, M. Tissandier experimented with a screw attached to a dynamo-electric motor. A screw of 2.80 m. in diameter was fixed to a small Siemens dynamo-electric machine, weighing 65 kilogrammes and

mounted upon a large stool (Fig. 2). The screw is composed of two plane wings, formed of wooden frames, on which silk, varnished with gum lac, is stretched in such a manner as to form a smooth rigid surface. Slender bands of iron strengthen the wooden arms, and small wires prevent the screw from being put out of shape during its rotation. The wings have an inclination of about thirty-five degrees. The motor was worked by a Faure accumulator, constructed by M. Reynier. The experiments were carried on in the Siemens workshop. With forty accumulators mounted in tension, the screw made one hundred revolutions a minute, the armature of the motor making one thousand.

Under these conditions it was easy to calculate by the column of air displaced, that the screw worked very energetically. The current of air at from one to two meters from the apparatus was intense, and could be sensibly felt at a distance of ten meters. This fact was authenticated at the Observatory where the system was exhibited.