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Paint for Floors.

A paint for floors, which economizes the use of oil colors and varnish, is described in the German technical press as having been composed by Herr Mareck. It is remarked that this paint can also be used on wood, stone, etc. For flooring, the following mixture has been found applicable: 2⅛ ounces of good, clear joiner's glue is soaked over night in cold water. It is dissolved, and then is added (being constantly stirred) to thickish milk of lime heated to boiling point, and prepared from one pound quick lime. Into boiling lime is poured (the stirring being continued) as much linseed oil as becomes united by means of saponification with the lime, and when the oil no longer mixes here is no more poured in.

If there happens to be too much oil added, it must be combined by the addition of some fresh lime paste. For the quantity of lime previously indicated, about half a pound of oil is required. After this white, thickish foundation paint has cooled, a color is added which is not affected by lime, and in case of need the paint is diluted with water, or by the addition of a mixture of lime water with some linseed oil. For yellowish-brown or brownish-red shades about a fourth part of the entire bulk is added of a brown solution obtained by boiling shellac and borax with water. This mixture is specially adapted for painting floors. The paint should be applied uniformly, and is described as covering the floor most effectually, and uniting with it in a durable manner. But it is remarked that it is not suitable for being used in cases where a room is in constant use, as under such circumstances it would probably have to be renewed in some places every three months. The most durable floor paint is said to be that composed of linseed oil varnish, which only requires to be renewed every six or twelve months. It penetrates into the wood and makes it water resisting; its properties being thus of a nature to compensate for its higher cost in proportion to other compositions used for a similar purpose. Its use is particularly recommended in schools and workrooms, as it lessens dust and facilitates the cleaning of the boards.—*The Builder.*

FRANCIS LANA, in 1670, proposed a boat raised by four hollow copper balls, exhausted of air, for navigating the air.

A Good Old Miller.

A New Jersey miller, who had become old and rheumatic, one day called his sons about him, and said: "Boys, I am growing stiff in the knees and faint at heart. My liver is out of order, and I can no longer distinguish between a peck and a half bushel when taking toll. This mill is worth ten thousand dollars. In order to form a stock company, and render my own burdens the lighter, I shall give Reuben two-tenths, Samuel the same, and Henry, who is my first-born, three-tenths. Bless you, my children, bless you. You may now go fishing for half a day." The three sons took the papers which the old man had made out, and instead of going fishing, they went down to a lawyer's office, called a meeting of stockholders, and proceeded to business. The first-born was elected president, Reuben treasurer, and Samuel secretary, and the following resolution was passed: "*Resolved*, That we bounce the old man, and run the mill after our own ideas!"

The above, from the *Millers' Review* (Philadelphia), illustrates substantially the experience of a good many indulgent, confiding fathers. Some that read this will be reminded of like cases that have come under their own notice.—ED.

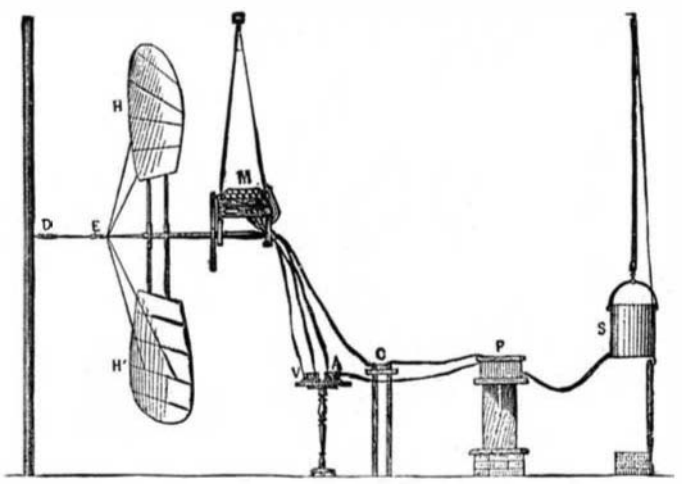


Fig. 1.—APPARATUS FOR EXPERIMENTS OF M. TISSANDIER.

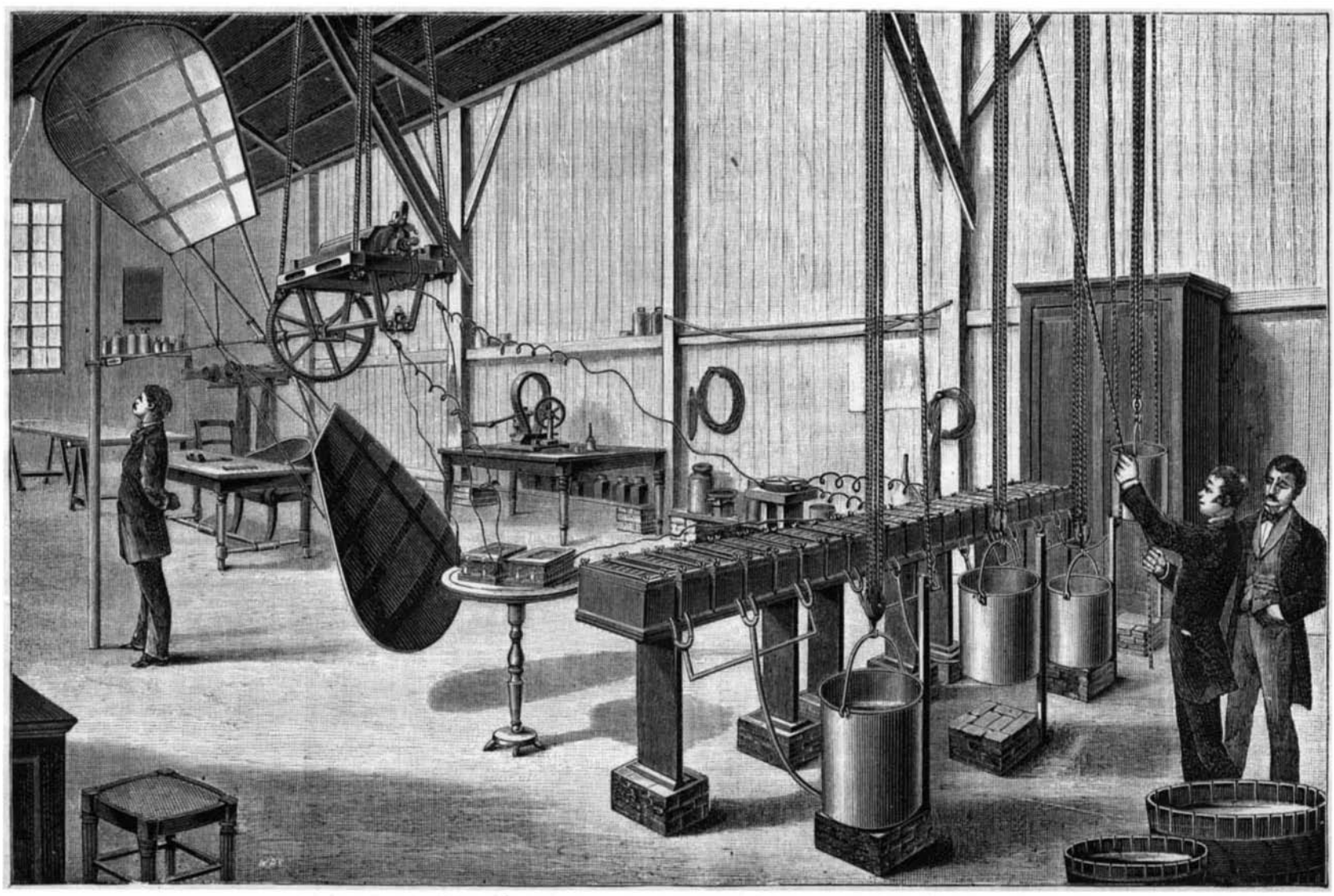
PROPULSION OF BALLOONS BY ELECTRICITY.

Attracted by the difficulties of the problem, M. Gaston Tissandier, of Paris, has undertaken to solve it, taking advantage of the recent progress of science. The interest and the novelty of these experiments consist chiefly in the choice of the motive power destined to actuate the propeller. These electrical motors have the following advantages for aerial navigation: Absence of fire, constancy of weight, and incomparable facility for putting in motion and arresting the mechanism. The lightness of the motor was obtained by the aid of a Siemens machine of special construction, and that of the source of electricity by the aid of bichromate of potash batteries.

The Motor (Fig. 2).—The motor is a Siemens continuous current dynamo, of a new design, constructed from the plans of M. George Boistel, Engineer of the Maison Siemens of Paris. It is characterized by the lightness of its component parts and the very elongated form of the armature, which has the effect of diminishing the relative value of the resistance of the wires which pass over each end of the drum. The position of the brushes is variable, and the inductors are included in the general circuit. The armature transmits its motion to the screw by means of a pinion and wheel; the relation of the velocities is as 1 to 10; therefore, when the motor makes 1,200 revolutions the screw makes 120. Experiments made upon this machine at different velocities and with various current intensities showed that the machine can furnish as much as 100 kilogrammeters per second (1½ horse power), measured at the brake, with a current of 45 amperes and a difference of potential of 40 volts at the terminals. Under these conditions a very simple calculation shows that the machine only transforms into work about 55 per cent of the electrical energy which is actually supplied to it. The lowness of this return is due to several causes, and a remedy has been devised, so that the return may easily attain 70 to 75 per cent, which is very satisfactory when we have to deal with an effective return resulting from *direct measurements* and not theoretical considerations, whose accuracy is often more than disputable.

The mode of measurement adopted consisted of measuring

(*Continued on page* 147.)



EXPERIMENTAL APPLICATIONS OF ELECTRICITY FOR BALLOON PROPULSION.