

SPIDER ENGINEERING.

BY GEO. M. HOPKINS.

If Cleopatra's Needle, now about to be erected in London, were animated and capable of a thousand contortions, and if it were required of a man to suspend it vertically without mechanical or other aid, we would then have a case parallel with the one described below.

Some time since it was the fortune of the writer to witness the curious scene illustrated by the accompanying engraving. A snake about twelve inches long, of the species *Coluber eximius*, commonly called the milk snake, became in some manner entangled in the web of a common house spider, which was doubtless prepared for smaller prey. The spider, with the utmost energy, began to throw its web about the head and mouth of the snake until the latter became stupefied and unable to detach itself from the snare of its captor. Whether this state was altogether due to suffocation or to bites inflicted by the spider, I cannot state. The web which was formed with such great rapidity was, for a short distance above the head of the snake, twisted into a stout thread, which was connected with guys and stays running in all possible directions, and attached to the shelf above and brackets on either side. These guys the spider constantly strengthened, and also shortened, so as to raise the snake from the floor, gradually but steadily and surely. The snake, although moving, seemed to be incapable of resisting the operations of the spider, and was raised until only about one fourth of its length rested on the floor.

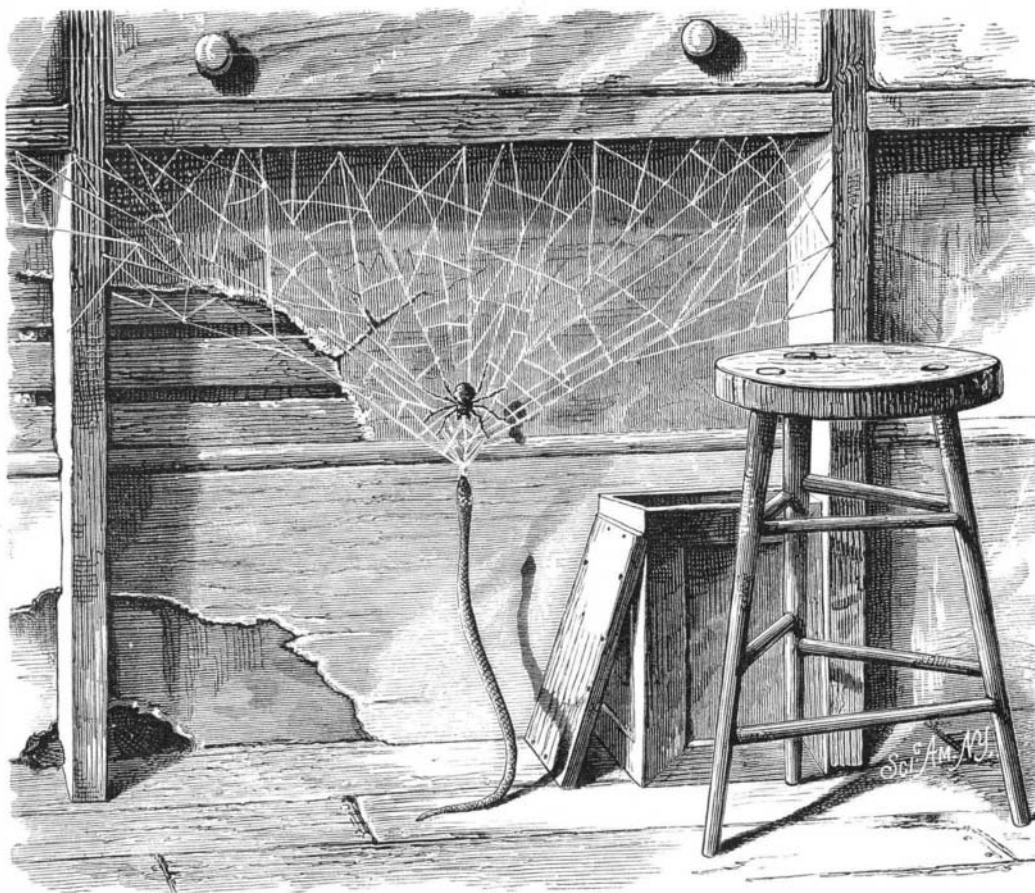
It would be interesting to know how the affair would have terminated had there been no interruption. The raising process continued for several hours, and the snake was finally released by one of the uninterested.

Gravity Indicator.

A new apparatus for experimental verification of the laws of falling bodies is described in the *Journal de Physique*, by M. Lebourg. A flattened cylindrico-conical weight, guided in its fall, like that of General Morin's apparatus, carries, instead of a style, a vertical tuning fork, furnished with a

short and stiff metallic wire. The weight falls down a rule, graduated on one of its edges, and covered with smoke black. The tuning fork is set in vibration automatically at the commencement of its fall, and it inscribes on the fixed rule a sinuous line, inspection of which affords an easy demonstration of the laws of the fall of bodies. By mounting on the

rendering the structure an interesting architectural study as well as an ornament to the exposition grounds. In the interior are a courtyard and fountain, around which run the courts which will contain the Algerian exhibits. The accompanying engraving, which we copy from *Engineering*, conveys a good idea of this handsome building.



MILK SNAKE AND SPIDER.

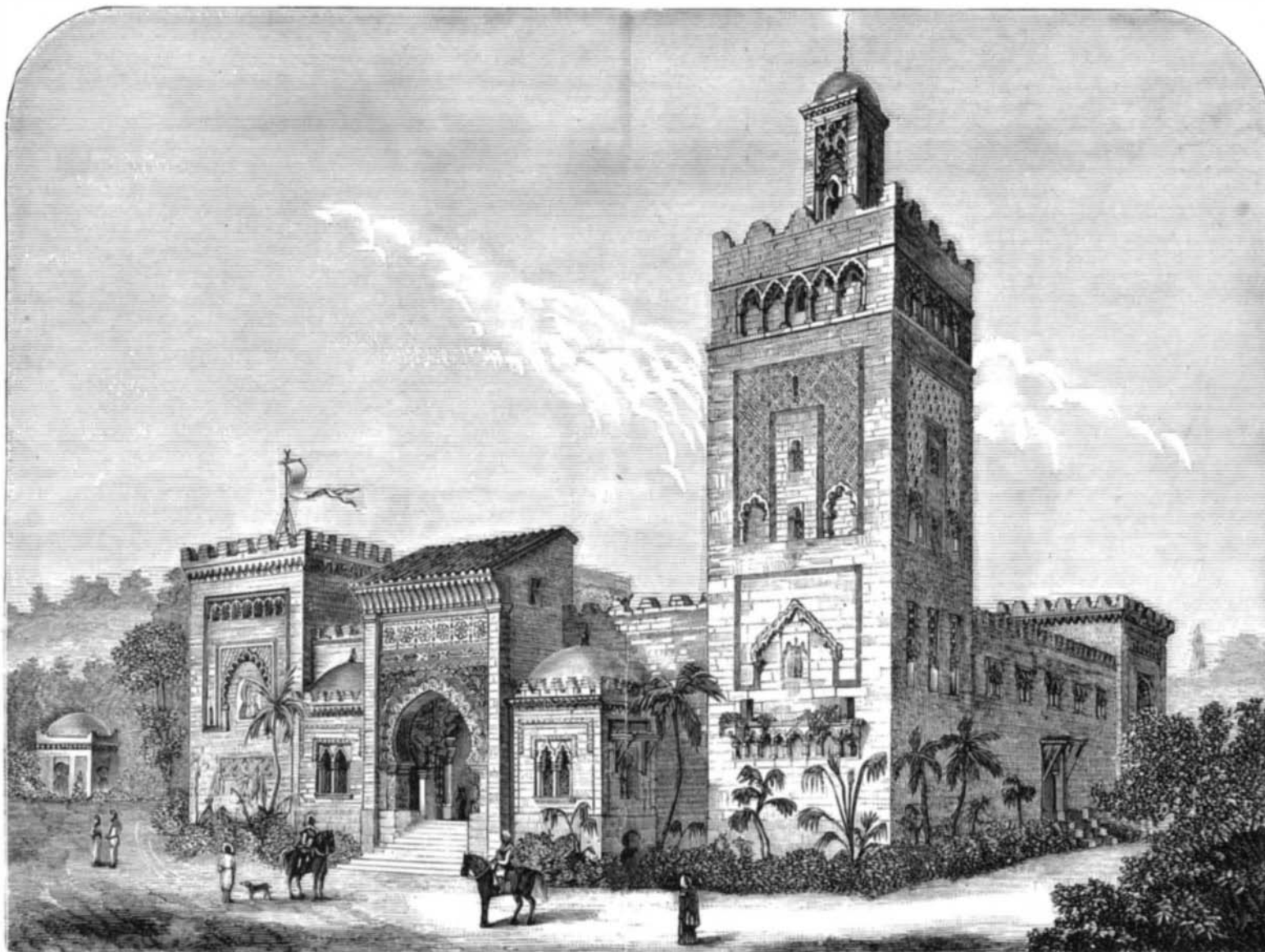
apparatus several tuning forks one may compare together their number of vibrations, and even determine the absolute height of the sound produced.

THE ALGERIAN PALACE AT THE PARIS EXPOSITION.

The Algerian palace, on the grounds of the Trocadéro, is now nearly completed, and will form one of the finest of the exposition buildings. The plan is eminently appropriate, and the tiles and mosaics used so lavishly in the decoration are fac-similes of those employed in ancient Moorish palaces,

too numerous to mention, all, however, distantly related to the fact that the earth is an "explosive globe," which is balanced by motion, and that that motion is "the equivalent of cohesiveness." All of which, so far as any knowledge we possess to the contrary regarding electric lines and explosive earths, may be quite true.

KRUPP'S establishment at Essen employs in the foundry alone 8,500 men. In the works are 298 boilers and as many steam engines, having together 25,000 horse power.



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