



STRAW-BURNING PORTABLE ENGINE AT THE VIENNA EXHIBITION (See page 99.)

of the day—probably, rather under 50 deg Fah.—the fire was kindled as described. In less than fifteen minutes steam began to be formed, and in about forty minutes was at 40 lbs. to 45 lbs pressure. The time of getting up steam is, in this case, comparatively unimportant, but this rapidity is sufficient to prove that straw is a more effective fuel than commonly is supposed.

The dynamometer brake having been adjusted to the resistance due to 20-horse power, and the engine being provided with a counter, was kept at work for some time, and the general

phenomena presented noticed. One man was readily able to feed in the supply of straw fuel. There was but little skill required in this operation, and a sufficient uniformity of supply was easily maintained. The entire fire-box was kept full of a ruddy glowing blaze, and the mass of flame was observed completely to fill the tubes and to reach the smoke-box.

One hundred weight (112 lbs.) of straw was then weighed out, and, from the commencement of its being fed in, was consumed in about fourteen minutes. This may be considered as about 400 lbs. per hour, or $\frac{400}{20} = 20$ lbs. per hour per horse-