



WHEEL-CUTTING MACHINE AT VIENNA.

The illustration given above represents a wheel dividing and cutting machine, which formed a part of the large collection of tools exhibited at Vienna by the Chemnitzer Werkzeugmaschinen Fabrik, formerly Joh. Zimmermann, of Chemnitz. This machine is adapted for cutting wood patterns, as well as for the softer metals, such as brass, zinc, tin, &c., in which case a cutting tooth is used, whilst the cutting and shaping of cast and wrought-iron wheels is effected by means of a rose cutter. Both these tools are provided with the machine, which is capable of cutting all classes of spur, bevel, and worm

wheels, up to 3 ft. 9 in. in diameter for iron, and 5 ft. 6 in. for wood, and of widths varying from  $\frac{3}{4}$  in. to 10 in.

The motion is transferred from the overhead gear by means of the two small vertical pulleys to the horizontal rope pulley on the machine, which drives, by means of spur wheels, the spindle carrying the cutter. This spindle is fixed to a slide, which is moved horizontally, but only in one direction, by means of the gearing in connexion with a screw spindle, whilst the slide has to be moved back by hand after the wheels have been put out of gear.

The wheel to be cut or divided, is fastened to the disc shown in the engraving; on the shaft of this disc is mounted at the