

THE BRITANNIA COMPANY'S LATHES AND SLIDE-RESTS.

We have received from the Britannia Company at Colchester, England, the well-known sewing-machine makers, an illustration of their small slide-rests intended for a three-inch centre lathe. It is but recently that lathes have issued from this Colchester workshop; but the firm is already doing a large amount of work of a highly creditable character, and this little rest is simply excellent. In one respect it deserves special commendation,—the quadrant plate allowing of angular adjustment being without the usual slots for the clamping screws, which always form receptacles for dirt and chips. This part is in fact a miniature turn-

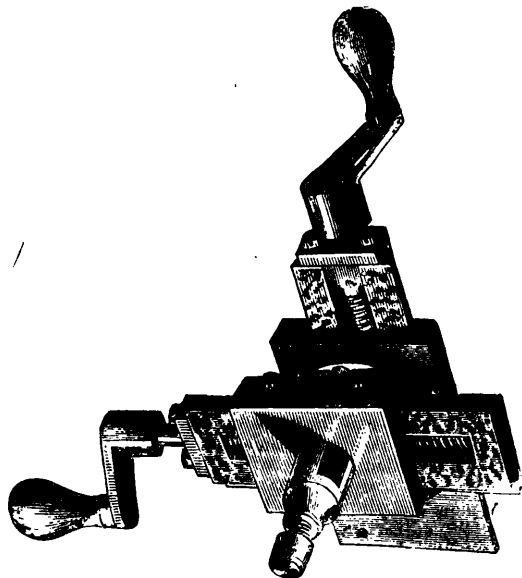


table of improved construction and is neatly graduated and figured to 50° each side of zero. The handles are of horn, which is pleasant to use and prevents rust, besides adding finish to the appearance of the rest. The upper plate is so fitted as to give ample support in the direction of the strain caused by the work upon the tool. The traverse of the upper slide is three inches, which suffices for so small a lathe. Altogether this is a compact, strong, and accurate rest, and if it is a fair specimen of the class of work as now done by the Britannia Company, they will become a conspicuous for good lathes as they have long been for sewing-machines.

TECHNICAL EDUCATION IN RUSSIA.

One of the principal establishments for technical education in Russia is the industrial school of the Czarevitch Nicolas, at St. Petersburg. This school, which bears the name of the late heir to the throne of the Russias, the Grand Duke Nicolas Alexandrovitch, is an establishment of a character which has not found much favor in our own country, combining general education with instruction in everything connected with scientific and manual industries. It originated in the benevolence of private individuals, who founded first an asylum for poor children destined to become artisans. The society obtained royal authority to open other similar establishments, and it has founded an industrial school for girls on the same principles as the preceding. The society and its foundations are placed under the patronage of the present heir to the throne of the Czar, the Grand Duke Alexander Alexandrovitch, who subscribes three thousand roubles annually towards its funds. The idea of the establishment of such a school in the capital of the kingdom was taken up very warmly; the members of the society already referred to gave 200,000 roubles for the construction of the building, and the merchants of St. Petersburg and others supplied more than 30,000 roubles. During the construction of the school, which occupied three years, the Municipal Council of the capital made an annual grant of 25,000 roubles, and the Government gave the site for its erection and a sum of 75,000 roubles. The value of the whole, as it stands, is set down at 175,000 roubles. The liberality in the supply of money enabled the architects and organizers of the school to pay special attention to the arrangements, not only

for the instruction, but for the health of the pupils; and the lighting, heating, and ventilation of the building are considered eminently satisfactory.

The school was opened in 1875, with the three lower classes only, but the number was soon afterwards raised to five, according to the original scheme. Last year the number of pupils was 240, and that of professors and teachers 24. Twelve of the pupils are maintained at the cost of the Grand Duke, and one at that of the Grand Duchess. The authorities of the city maintain 100 pupils at the cost of 25,000 roubles per annum (£3,400, nearly); and the original society supports 38 other pupils. A few of the others are maintained by the establishment itself or some of its individuals, others by governmental departments, and the rest by their parents and friends, who pay 250 roubles per annum (about £32).

This establishment is capable of receiving 300 pupils, all resident; there are no day scholars. The total expenses of the school, with the full number of scholars, would be 95,000 roubles.

The boys are admitted to the lowest class at the age of 11, those who are older are examined, and may be admitted to either of the three lower classes.

The instruction includes:—

1. Catechism and sacred history, the Russian language, arithmetic, geometry, history, natural history, geography, physics, mechanics, and the technology of woods and metals.

2. Freehand and mechanical drawing, writing, singing, and gymnastics.

3. Trades.

The programme of studies is arranged by a committee composed of the heads of the establishment, and secular representatives of the arts, sciences, and education.

The amount of time devoted to the various studies is fixed as follows:—

The five classes of instruction occupy 69 hours per week, 21 being devoted to the Russian language, 14 to arithmetic, 9 to catechism and sacred history, 8 to geometry, 5 to history, 4 to geography, 5 to writing, and 3 to natural history. In addition to the above, 9 hours are devoted to special instruction in physics and mechanics, 4 hours to the technology of woods and metals, 5 hours to singing, and 6 to gymnastics; making up a total of 89 hours per week.

Besides the above subjects and exercises, drawing, of course, fills a prominent place; to it are devoted 41 hours in each week, by the five classes. After an elementary course, the pupils draw from geometrical solids and plaster casts, and execute special designs for furniture and wood carving. The course of mechanical drawing includes a section specially adapted to iron-workers and mechanicians. The instruction in drawing terminates with working drawings belonging to the various trades taught in the school.

The industrial instruction is confined to the three upper classes of the school, and ordinarily occupies 20 hours per week, but the two weeks preceding the holidays are exclusively devoted to work in the various ateliers of the school, which include shops for cabinet-making, modelling, turning, wood-carving, fine iron-work, metal turning, soldering, forging, and fitting.

The instruction in the workshop is on a very methodical plan, including the teaching of the elementary data, as well as the special processes of each craft. Correct and precise work, and the proper employment of tools, are the objects in view. Orders are executed in the workshops and ateliers, but no pupil is permitted to execute such work until he shall have passed satisfactorily through all the prescribed courses of study and instruction.

When the pupils have completed their studies, they may remain one or two years longer in the school, to perfect themselves in any one of the crafts, and obtain the title of apprentice-workman; this extra time is devoted exclusively to work.

On quitting the school, each pupil receives a certificate, and those who have passed with great credit through their examinations earn the titles of foremen and assistant-foremen, and obtain assistance to enable them to establish themselves in business, or to complete their industrial education and practice.

The industrial institutes, schools, and museums of St. Petersburg and Moscow made a very remarkable show in the machinery court at the Paris Exhibition last year. The extent of the collection of diagrams, models, and other educational material, and the admirable execution of a large number of tools, machines, and models made by the pupils in these establishments, attracted much attention, the unavoidable inference being that the Russian Government and people are intent on raising the industrial and artistic level of the population as much and as rapidly as science and organization can effect.—*Journal of the Society of Arts.*