

seen in Fig. 322. It is just drawn down with little regard to shape or dimensions, and bent round before stamping. Another is the railway-carriage key finished in the die (Fig. 323), having a deep grooving, from a rough blank, seen in Figs. 324 and 325.

These dies, and all those for the lighter class of work, are cut from lumps of mild steel in the shop located on the plan view in a previous article.

But for most of the dies used at Swindon cast iron vastly predominates, and scarcely any are banded. As the work is chiefly done under the hydraulic presses, the jar which is so destructive to cast-iron dies under hammers is eliminated. Apparently, cracked dies are nearly unknown. The metal is very massive, ranging between 3 in. and 5 in. in thickness. Handles are seldom cast in, but plenty of holes are cast in the die bodies for the insertion of rods by which the dies can be lifted and turned. Very strong lugs are cast for the attachment of dies to the presses, and the holes invariably come clear out to the outsides of the lugs, which renders the insertion of bolts easier than it would be if ordinary holes were cast in.

THE NEW VICTORIA STATION AT NOTTINGHAM.

In the sixty-seventh volume of *ENGINEERING* we described and illustrated many of the important works on the Great Central Railway extension to London; but pressure on our space prevented us from following up this most interesting topic, and

we now return to the subject, principally to deal with the splendid joint station at Nottingham, the convenience of which has now been established by its use for some time by the two owning companies—the Great Central and the Great Northern.

This station is certainly the most important piece of work on the northern section of the line of which Mr. Edward Parry, M. Inst. C.E., is engineer. In this and other work he has been assisted by Mr. Frederick W. Bidder, M. Inst. C.E., who has had charge of the details of the constructional work, while Mr. A. E. Lambert has been responsible for the architectural details. Mr. A. A. Barker has been resident engineer on the Nottingham works. The station, as we have stated, is the joint property of the Great Central and Great Northern Railway Companies, the latter using the permanent way of the former for some distance south, as well as north, of the station, and in this way obviating a long detour on the route from Grantham to Derby and the Midlands.

The site of the station is very central, and the plan is admirably arranged alike for dealing with a large volume of traffic and for the convenience of passengers. A plan is given on page 678 (Fig. 1), from which it will be seen that the station lies between two tunnels, known as the Victoria-street and Mansfield-road tunnels. The length between the tunnel faces is 650 yards. At the north end the rail level is 58 ft. below the original surface, at the south end 29 ft.; but in the centre there was a depression in the original contour, the depth there being only

