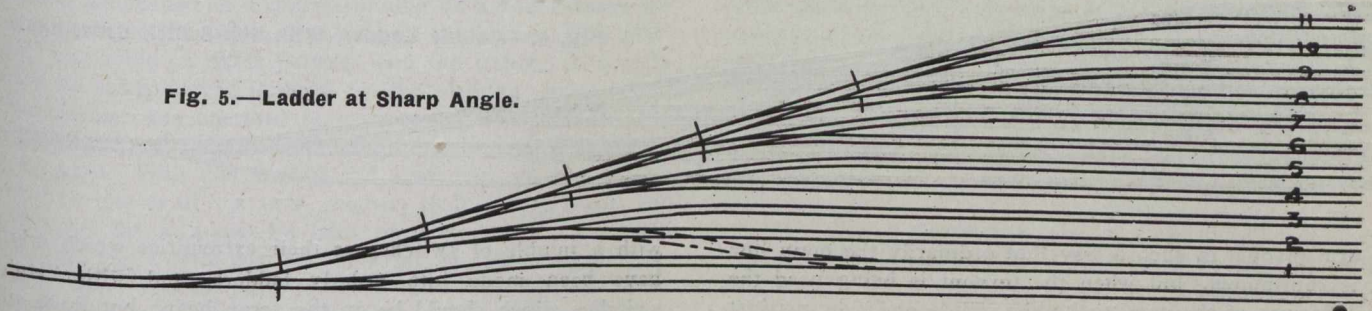


posite sides of the main track, so that the switchmen have to be continually crossing and recrossing the track in front of the switching engine and trains.

The main ladder track has to be placed at such an angle to the yard tracks that there will be enough curvature between the heels of the frogs in the ladder track, and the straight tracks to which they connect, to allow a second switch to be placed within this curve. The primary switches

Fig. 5.—Ladder at Sharp Angle.



in the ladder track are directly connected to each alternate track, and the secondary switches pick up the remaining tracks. The typical layout in Fig. 5 shows the method better than it can be described. A certain amount of variation is possible in the angle of the ladder track, but it is limited by the lengths of the switches, the frog angles and the track centres.

As will be seen from the plan of this type of layout, it is not possible to connect the first, or No. 1 track to the ladder, but this difficulty is easily overcome by running it into the main line, or else, as shown dotted, from No. 2 track.

In a slip switch of this nature the movement of all the points is made by one lever being placed at the centre of the crossing, but the use of this crossing is not considered very advisable except in yards with interlocking apparatus, owing to the increased liability to accident through two trains coming together, either "head on" or "sideswiping."

These slip switch crossings have enabled a design to be made for track layouts which is now being used in various forms in general large passenger terminals. The general idea of this layout is shown in Fig. 8, and it will be readily seen that great flexibility of train movement can be obtained,

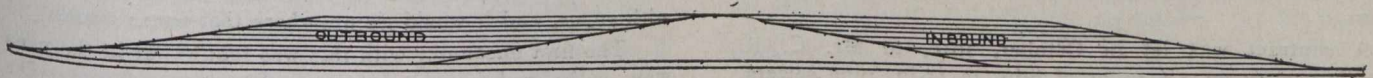


Fig. 6.—Parallel Ladders.

It frequently happens that the ladder track at the end of a yard cannot be located where the main tracks are on a tangent; in which case the ladder track has to be built to the same curvature as the main line, but if the yard is on the outside of the curve, it becomes difficult to lay down the switches without excessive curvature and the limit is reached when the curvature of the switch added to the curvature of the main line reaches the maximum permissible curvature.

Modern freight classification and storage yards are very often designed so that all the tracks forming one "set" are the same length, thus reducing the difficulties of operating the yard through having a number of tracks of greatly vary-

as either an incoming or outgoing train can keep to its correct track practically to the end of the platform to or from which it is bound. For instance, an outgoing train from platform 7 will take the switch to the right at the point "b" and thus be on its own right-hand track, and be independent of trains arriving at the platforms beyond No. 7. Similarly an incoming train will keep to the right-hand track as far as possible and only cross over to its own platform track as close to it as possible. The switches marked "b" in Fig. 8 are slip switch crossovers similar to that shown in detail in Fig. 7, but those marked "a" have the connecting switch on the lower side only, so are "half slips."

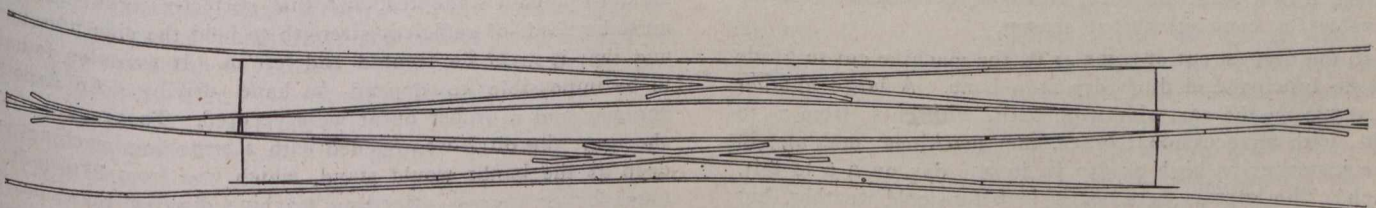


Fig. 7.—Slip-Switch Crossing.

ing lengths. A typical layout for a yard of this nature is shown in Fig. 6, giving two main yards for the sorting of inbound and outbound freight, with a space between them for storage, caboose, and engine tracks, yard offices, etc.

A type of combined switch and crossover, known as a slip switch crossing, is shown in Fig. 7, and is being largely used in places where great flexibility of movement is required.

This type of double ladder with slip switches is rapidly coming into use in terminals where a large number of trains are handled, as it does away with a great deal of the congestion that is liable to take place through one train having to wait outside the terminal while another one is just leaving. This leads to delays, one delay leads to another, and the working arrangements of the whole terminal are upset.