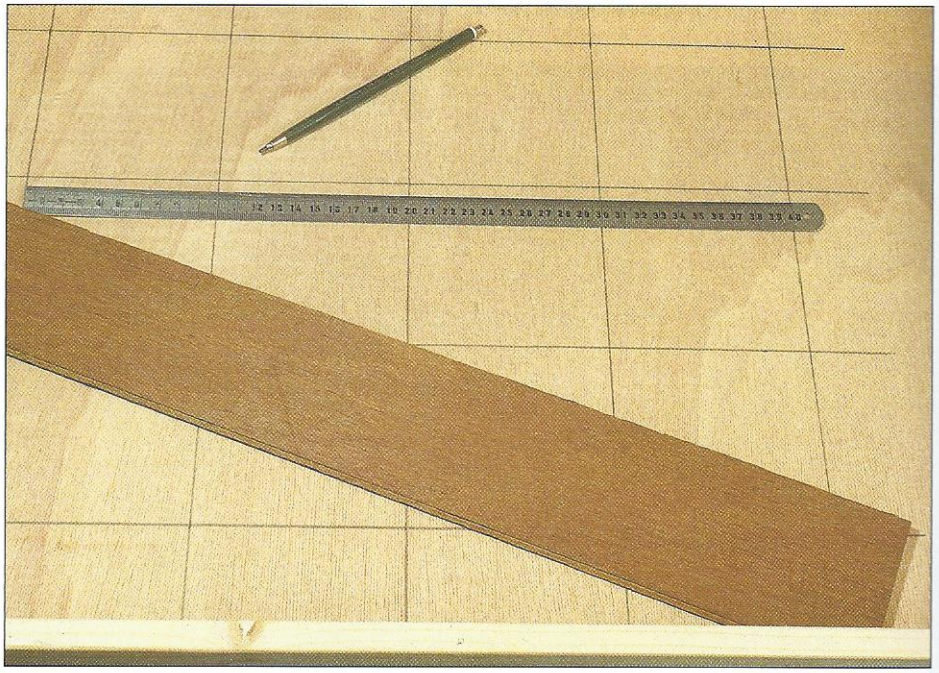
"Kottenforst"

A layout with K track fo



Before we start laying track, mark the layout segments from below with pencil lines some 10 cm (3-7/8") apart parallel to the outer edges. These lines will be a great help later on in laying the wires.

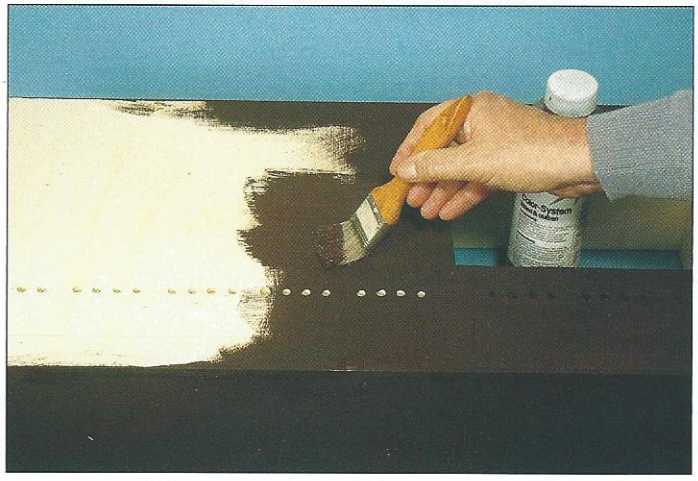
Below left. We now install the layout's control panel. In the foreground, you see the holes for the wiring leading to the switches. On the right, the opening in the baseboard of the transformers. The boxes are made of plywood painted brown.

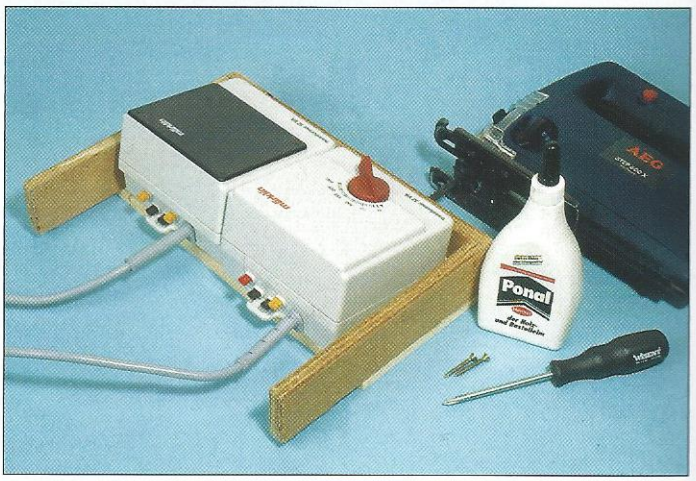
Below right. Both transformers are fastened down in a separate box and fed into the control panel through the opening, so that they protrude only a few centimeters or inches. The transformer box is merely screwed onto the control panel and not glued. This makes it easy to remove a transformer if there's a problem.

In the first of the series of articles on the "Kottenforst", a K Track layout for beginners, we discussed the planning process and the layout substructure. Today we will continue with the trackbed and the tracks themselves.

But first a few comments. The following stages may have nothing directly to do with today's topic, but there are sound practical reasons why they should be taken care of at this stage. First, we draw a box on each of the four segments of the layout, consisting of pencil lines approximately 10 cm (3-7/8") apart parallel to the outer edges. These guidelines will later make it much easier to lay the wiring cleanly (more about that in the next issue).

In addition, it is logical at this point to build the plywood control panel. As is described in greater detail below, we have to produce a subframe for the hidden storage yard, so that the woodwork-





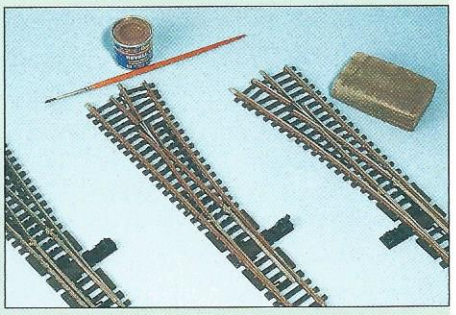
Layout/II
for beginners

ing process can be finished as a priority. The control panel consists of 10 mm (3/8") plywood. It looks like a box that opens from below. Now cut an opening on the right hand side of the control panel baseboard, through which the transformers can be fed into it. The switch units are placed on the front edge - with the turnouts and signal switches and feedback on the left hand side and the on/off switches for the unpowered track sections. The empty space on the control panel is intended for the installation of the track plan used to orient the "operations supervisor". The transformers are installed in a separate box, which is then screwed (not glued!) onto the baseboard of the control panel from below. The edges of the box are high enough that the transformers stick out only a little above the baseboard, albeit far enough that you can stretch out your hand towards the speed controller without twisting your wrist.

The switches are screwed onto the baseboard. It is recommended that the screw holes be widened with a 2 mm (1/16") drill bit. You can then simply screw the delicate screws through the controller housing into the baseboard with a jeweler's screwdriver.

Just one more preparatory exercise to finish up. This can be taken care of in comfort at the workbench - your back will thank you for it! All the turnouts for the visible portion of the layout are colored in advance. The track sides receive a coat of Revell No. 83 (rust brown), or the corresponding Humbrol color (113). The ties are not painted for a number of reasons, not the least important of which is the large number of moving parts on the elegant Märklin turnouts. Care is also required around the switch rails and frogs when painting the rails. Once the paint has dried for a few hours, the surfaces of the rails can be cleaned with a Roco track cleaner block. It hardly seems necessary to mention it, but the ends of the rails must remain unpainted for at least 1 cm (3/8"), or else the rail joiners will not be able to conduct the current.

The hidden storage yard tracks are assembled as the drawing shows. They consist of standard track pieces, with the exception of the stub track. Testing as you go makes it possible to determine how much clearance you need for the top to the hidden storage yard. This backdrop provides the screen between the front and rear areas of the layout. The measurements are determined by the

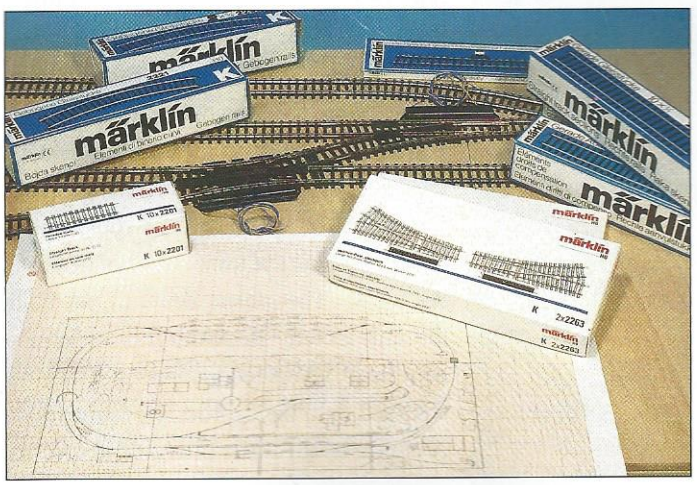


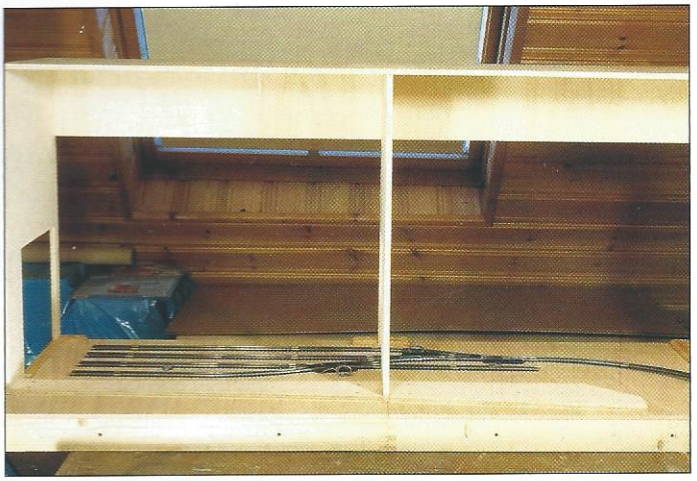
Above 1. The tiny screws can then easily be screwed into the baseplate through the switch housing using a jeweler's screwdriver.

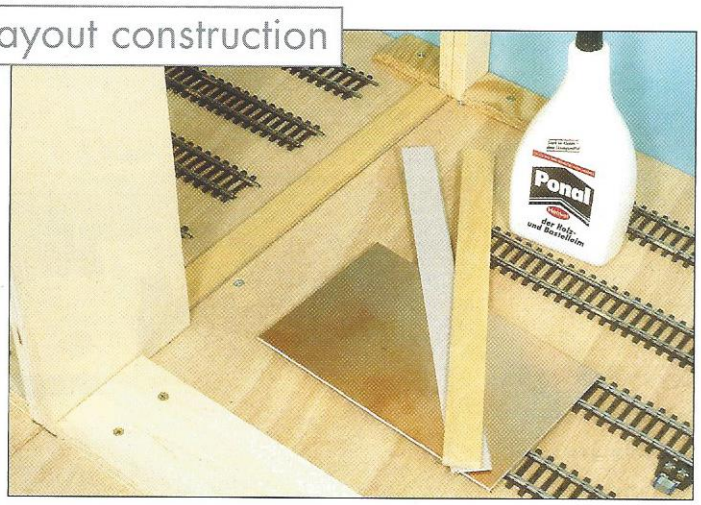
Above 2. The turnouts for the visible part of the layout are painted before they are installed. The rails receive a coat of rust-colored paint (Revell No. 83). The ties are not painted. On the left of the photograph you see an unpainted turnout, while the middle turnout has already been painted.

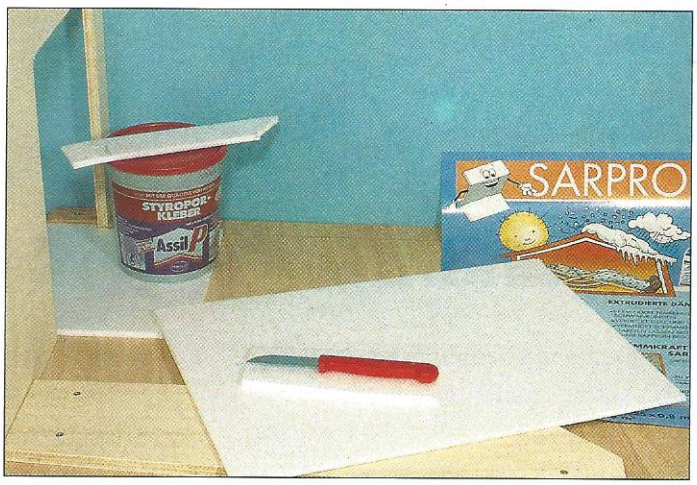
Below left. The entire hidden storage yard consists of standard Märklin K Track. Only the stub track consists of flexible track.

Below right. The right hand segment of the hidden storage yard with a plywood superstructure.



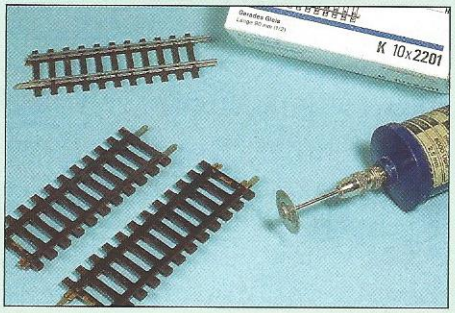




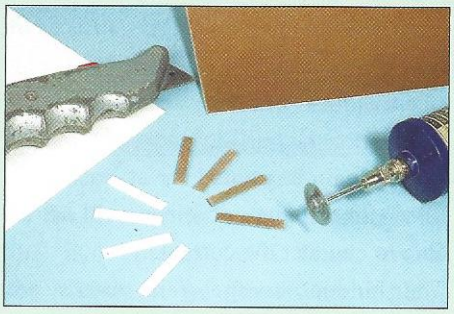


Above left. At the joints of the two segments, 1 mm (1/32") strips of cardboard and a 5 x 20 mm (3/8"x 6/8")wood strip are stuck on as wide as the track.

Above right. Tracks are again removed. The entire area on which the track is to be laid is covered with 6 mm (1/4") thick Styrofoam sheets (Sarpron). Cork adhesive is the most effective glue for this.

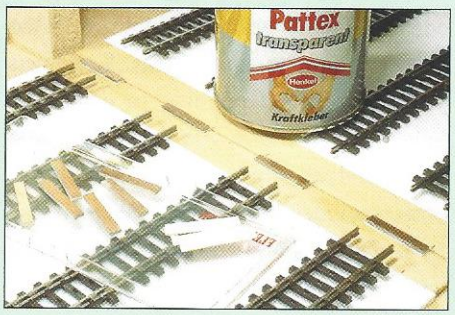


The four photos in the midden. The rail joiners and the last ties are removed from the track pieces (1/2 standard K Track, item No. 2201), which abut the joint in the segments, use a screwdriver for the rail joiners and a cutting disk for the ties.

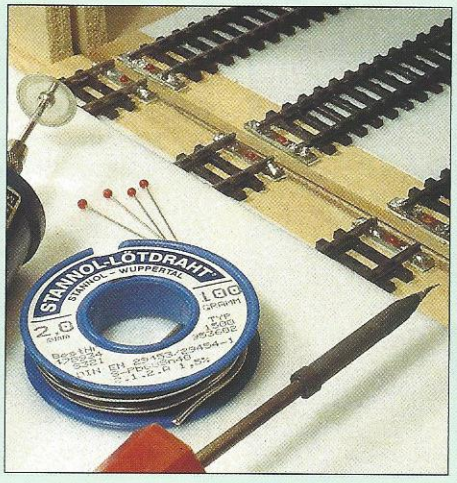


A circuit board (copper-covered Pertinax), obtainable from electronic stores, is cut into 5 mm (3/16")wide strips for the hidden storage yard. In order to even out the height, extra plastic sheets (eg, Preiser) are cut in strips 6 mm wide (1/4") and 5 mm high (3/16").

The plastic and Pertinax strips are glued onto the wood strips where the segments join.



The track pieces are laid out and soldered onto the Pertinax strips. The edges of the rails will need subsequently to be rounded off slightly. Pinheads are glued onto the Pertinax ties to keep the pick-up shoes from falling into the gap between the center stud contacts (ie, onto the Pertinax ties) and getting caught.



backdrop (eg, the Faller sky) for height and by the gentle curve in towards the center of the layout, which is apparent from the drawings. Get the lumberyard or hardware store to cut the 1/4" plywood for your needs. Three vertical sheets are required for each segment of the hidden storage yard, one 15 cm (5-7/8") wide lateral connection and a covering board, which should be cut to fit the shape of the screen. The horizontal boards, once the openings for the track have been cut into them, are glued with the segments. Wood supports are solidly glued and screwed onto the boards. Perpendicular screws now join the boards and the sides, so that the entire construction is firm and fits exactly.

The background, which consists of two hardboard sheets, is not screwed and nailed until after the track has been laid. The nails are covered with filler (such as Revell Plasto), sanded, and covered in wood glue. The reason for this is that when the "sky" is pulled up, moisture can run along the nail and under certain circumstances, spots can appear. The purpose of the wood glue is to prevent this.

The connectors between the various layout segments need more careful consideration. Since the layout is to be transportable, it is a good idea not to connect the rail ends with joiners. The rails themselves must, however, be positioned exactly, so that the trains will not derail at the joins. The plastic ties will not hold the rails exactly in position on a permanent basis, so we recommend that they be soldered onto the appropriate foundation. A circuit board wafer is available for this

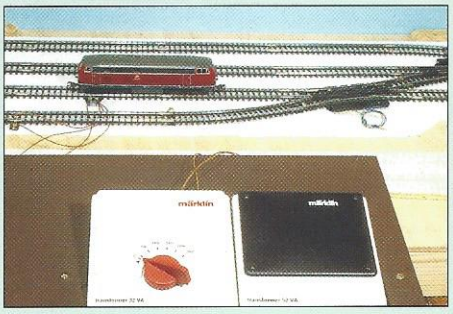
(copper-covered Pertinax), which can be cut to the width of the ties and glued on. Pertinax cannot be broken like polystyrene sheet; it must be cut. After numerous vain attempts to cut cleanly through the material, I discovered a simple method of achieving a satisfactory result. The copper-covered side of the Pertinax is scratched with a knife, using a steel ruler as a guide. Along this groove, you can now use a mini cutting disk to achieve an (astonishingly) exact cut. A 0.5 mm (1/64") polystyrene sheet (such as the Preiser line) is then needed to equalize the height. Since a trackbed is needed for the visible portion of the layout, one is also needed for the hidden storage yard. This has a certain noise suppression function and you do not need to equalize the unavoidable difference in height. Since the desired cork sheets (2 or 3 mm (5/32" or 1/8") thick) were not available in the hardware store, I decided to use foam sheets.

The ones I chose, the Sarpron brand, were (unfortunately) 6 mm (15/64") thick, which is not directly compatible with the Faller cork trackbed (5 mm / 3/8"). In addition, I could not find any 5 mm (13/64") supports in this thickness. The advantage of this material, however, is undoubtedly its price (approximately DM 16 in Germany for 3 meters (117"), the ease with which it can be worked with a knife and its stability.

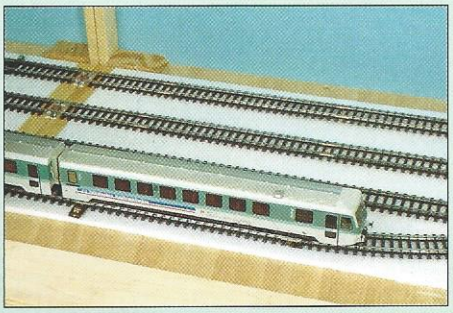
Cardboard 1 mm (1/32") thick and 5 mm (3/16") wood supports are glued using white glue at the joins between the segments along the entire width of the track. The foam sheets are attached here and spread over the entire ladder track area. The manufacturers recommend that Sapron sheets be glued with cork adhesive. Remove the rail joiners (using a screwdriver) from the track pieces (here Märklin item No. 2201 _ standard straight) adjacent to the joint between the segments. The final tie is then removed with a cutting tool.

Before the rails are soldered on, the block insulation (center rail insulator in the Märklin system) for the yard tracks, the current connections for center stud con-

Of course, we mustn't forget the electrical connections and the insulation blocks here in the hidden storage yard. To do this, we use standard parts from the Märklin K Track line.



Test rolling stock in the hidden storage yard. The center studs and the rails have current connected to them to check that all the connections are working.



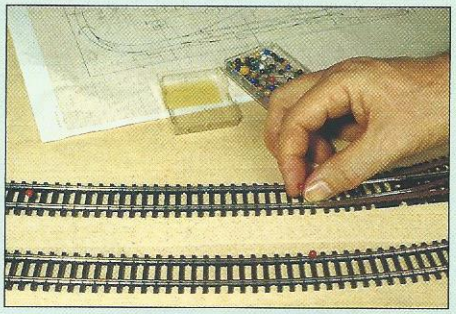
This test also shows whether the locomotives stop at the desired position on the yard track or whether the "dead" sections should be moved or enlarged.

You can also test the current with a voltage meter. If everything appears to be working, the track is pinned down. White glue is dribbled between the ties, creating a durable adhesion without the need to screw down the track. The turnout motors are screwed down.

A sheet of fiberboard serves as foundation for the backdrop. Don't forget to cut out the openings for the track with a sharp knife before the backdrop is glued and nailed. The nail holes can be filled (eg, with Revell Plasto) and sanded. The final stage is a thin coat of white glue.

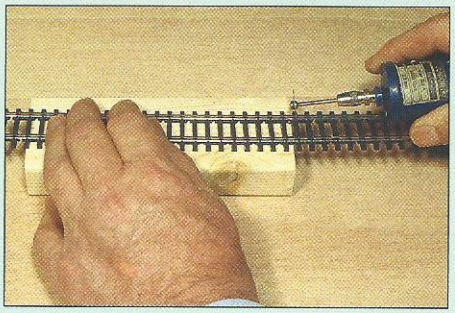
Laying track in the front left hand segment. Flexible track is often used in such circumstances to achieve an elegant sweep or where standard track pieces do not fit the bill.

The flexible track sections are pinned down.

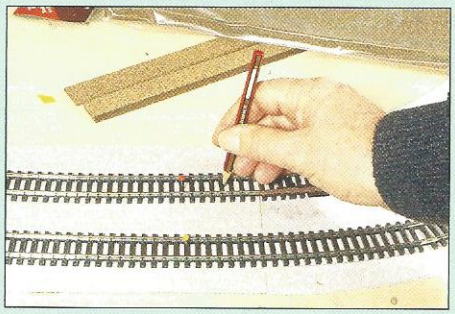


Laying flexible track between a curved- and standard turnout. The flexible track section is attached to the curved turnout, moved into the desired position and cut to fit the standard turnout with a cutting disk.

The flexible track is placed on a block of wood and cut to size. Take care that the cutting disk cuts at an angle. As a result, you need approximately 1-2 mm (1/32-1/16") of additional track length and file the cut.



A Faller cork trackbed is glued on from the curved turnout to the backdrop. A cardboard strip approximately 1 mm (1/32") thick compensates for the height difference between 5 mm (3/16")thick cork strip and the 6 mm (1/4") Sarpron sheets used for the station ladder tracks. The center of the track is marked with a pencil.



The Faller cork strips are stuck along the mark and pinned.

The entire trackbed is painted with a mixture of a brown and black paint.

tacts and rails, and the feedback must be provided for and prepared using the appropriate parts from the Märklin program. For track occupation feedback, in the absence of Märklin circuit tracks, one rail must be cut and reconnected with Roco insulated rail joiners. The covered storage yard has three spur tracks (including a stub track) with track occupation feedback.

The plastic and Pertinax strips must now be glued onto the wood supports; the tracks are laid out (using some guidelines and by sight) and then the rails can be soldered. This admittedly is not an entirely simple procedure: the solder does not adhere very well to the rails. Experiments with different types of solder and the use of solder paste produce the following results: the most successful was the Electrolot brand using additional solder paste. While messy solder joints are not disastrous in the hidden storage yard, they should be avoided in the visible section.

The next item on the agenda is to test the rolling stock and wiring in the entire hidden storage yard. The crucial factor is to determine whether the rolling stock really does stop at the desired place on the yard track - you can't do that with a voltage meter. There was one other little problem that emerged. The pickup shoes on the locomotives dropped onto the Pertinax "steps" while crossing the joint in the segments and got caught. This was solved by glueing pinheads or small strips of polystyrene between the rails as a substitute for the stud contacts: they cannot exceed the height of the contact stud or the current will be interrupted. Despite the interruption in current over two ties, even a small locomotive traveling slowly can make it over this area without stopping.

Once all the testing has been successfully completed, white glue is dripped between the ties at intervals of a few centimeters. The track is fixed with pins to prevent it from moving. Then the turnout motors are screwed down. Along with a large number of standard K Track pieces, flexible track is used in the visible part of

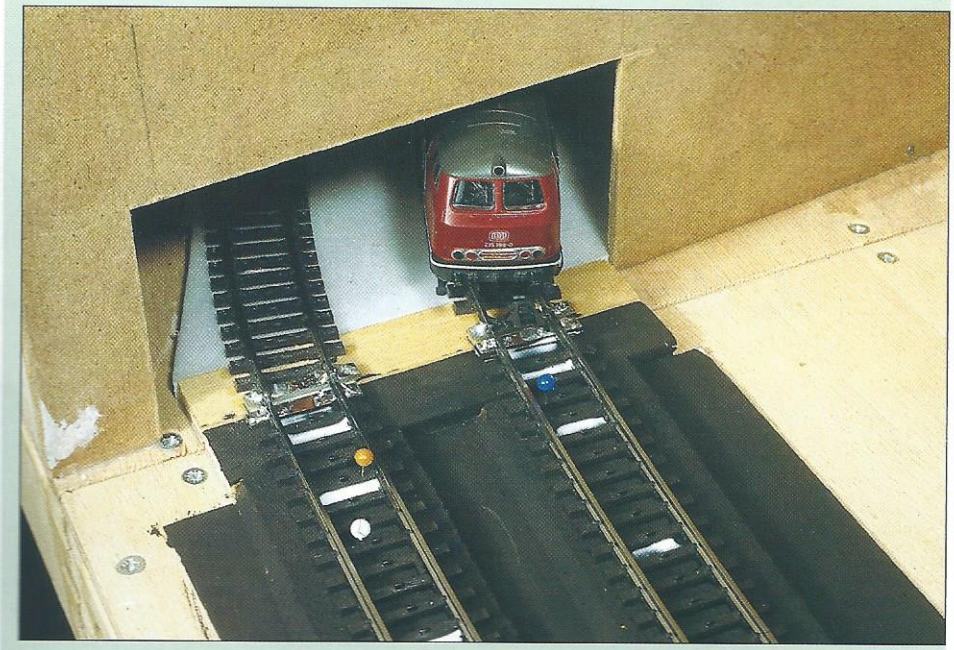
the layout to achieve its characteristically elegant track patterns, quite apart from the fact that not every track combination can be achieved with standard track pieces. The starting points for track laying are the turnouts (curved and wide radius turnouts). They are assembled, supplemented by standard track and fixed with pins. The flexible track sections are connected to a track piece, laid as far as the next connection and attached. The cutting disk is used to "nick" the separation points. Be careful that you hold the cutting disk at the correct angle so that you do not end up with a 90° cut, thereby losing another 2 mm (5/64") of rail. The flexible track pieces are again removed and placed on a board to be cut to size. The cut edge is then filed or ground.

A Faller cork trackbed is glued (with a cardboard foundation to balance out the height) on the curves at the edge of the layout. The glued edges of the individual strips of cork are identified by markings in the center of the track. The trackbed is then painted dark brown. In the station area, foam sheets are again used as a track foundation. The track pieces are fixed with pins, as described above, and then white glue is dripped between the ties.

The track pieces subsequently receive the final coat of adhesive in the form of ballast. Don't forget, even here in the front of the layout, those track sections which have to be insulated. In addition, the distance between the tracks in the left hand segment in the tunnel area must be consistent with the dimensions of the Faller tunnel.

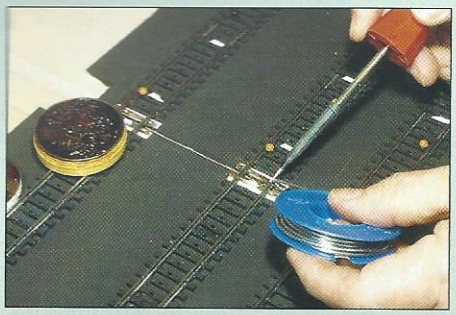
That's it for today. In the next article, we'll look at the turnout motors in the front of the layout, signals and wiring. To end with another tip: try to locate the materials you need for the next stage in good time, as not all components are immediately available!

Thomas Mauer



The joint between the front and rear segments is also achieved using Pertinax strips soldered onto the rails.

Watch the sides of the tunnel portals when laying tracks.



The point where the two front segments join. The Pertinax ties here are really only as wide as a rail tie and cut to the exact length. Soldering paste is really helpful creating the connection between the rail and the solder.

The front right segment of the layout. The departure and connecting track to the factory will be laid at a later date. The trains could now actually run around the track, if the track were not held in position by several dozen pins.