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Metallurgy or Manufacture?

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Something for metallurgists and model engineers to ponder

Here we have two little items that are actually one or should we say, were one until they rent themselves asunder (broke is too weak here). They are small and seemingly insignificant but we will continue. Some of you may know that your editor is bravely encouraging an old lady who has not steamed for some 50 years to have another go. She is a 3½in. Princess Royal built to the Clarkson drawings at least 50 years ago but by whom we do not know. This little item is a blow down valve mounted on the backhead. It consists of the screw put in the end and a hole, which you can see, underneath. As fitted, blowing down means the cab is filled with hot water and perhaps a little steam. So, could we improve it? Upon removal, it came away in two bits! The outer section dropped into the cab, the inner was extracted by putting the long nose



pliers in the hole and turning, all very easy really. Now we come to the analysis that I trust our readers will do. The top picture is the outer bit that was against the backhead and the lower picture is what was left. The shiny section seems to be all that was holding them together and that is after a shell test on the boiler at 180psi. By the shiny bit, I mean the less than half a circle on the right-hand side in the upper picture and a similar shiny rim on the portion in the lower picture, that was the part screwed into the backhead.

Makes one shudder to think what might have happened while trundling around the local track.

