Spark Arresters

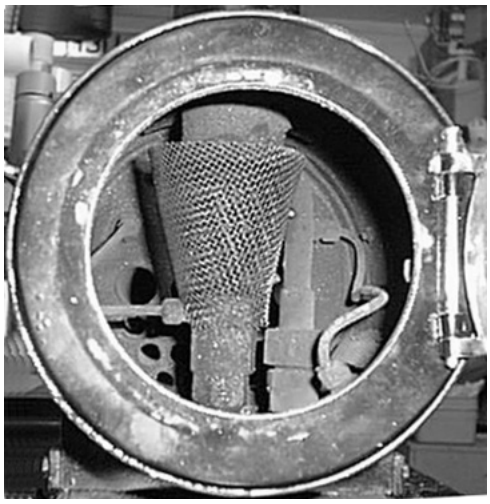
A spark arrester is something that will improve your driving experience. How? For a start you will no longer suffer the pain and anguish of a hot cinder in your eye and your passengers will not suffer from holes being burned in their clothing.

There are various forms of spark arrester proposed for our steam locomotives. At first glance the inverted tea strainer held over the chimney by a Jubilee Clip seems to be the simplest. But is it really and who wants to see their scale model engine with such a monstrous fitting?

The stainless steel mesh cone simply fitted over the blast nozzle and up to the petticoat pipe is easy to fit and as it's not in the way of the oily exhaust steam doesn't get oiled up.

The first stage is to take a few simple measurements. You need to know the distance from the blast nozzle to the petticoat pipe and the diameters of these two items. On a piece of thin card draw a vertical centre line. Across it, at right angles draw another line to represent the petticoat pipe. Draw another line parallel to and below it at the distance that the blast nozzle is away from the petticoat pipe. Make the petticoat pipe line the same length as the diameter of the petticoat pipe, centred about the vertical centre line. Do the same for the blast nozzle line. Now draw a pair of lines to join the ends of the two horizontal lines and continue them downwards until they cross the vertical centre line. Where they cross is the centre of the two concentric arcs that form the top and bottom of the truncated cone. Set your compasses to the distance from the centre to where the blast nozzle line crosses the centre line and draw an arc. Repeat for the petticoat pipe line. The lengths of each arc is the circumference of the blast nozzle and petticoat pipe and is found by the simple formula:

Circumference = π * Diameter. (where π is 3.142)



Super micron accuracy is not required here and as long as you make the arcs longer than required you will be all right. In any case you will have to allow a bit extra to provide an overlap. Join the ends of the two arcs and add a bit for the overlap. Cut out the piece and form it into a truncated cone. A bit of sticky tape will hold it together. Cut out a notch in the bottom of the cone to fit over the blower pipe and then try fitting the card cone in place. Lift it up over the petticoat pipe so that the bottom will slip across the blast nozzle and then drop back down. You will probably need to play around a bit to get it to slip into place.

Remove the card template and open it out. Place it on the piece of stainless steel mesh and mark round it with a marker pen. Cut out the gauze version and form into a truncated cone. A couple of 10BA nuts and bolts with washers are all that's needed to hold the device together.

The stainless steel gauze is sold by Bruce Engineering especially for making spark arresters of this type. The picture shows the spark arrester fitted into the Society's Maid of Kent.