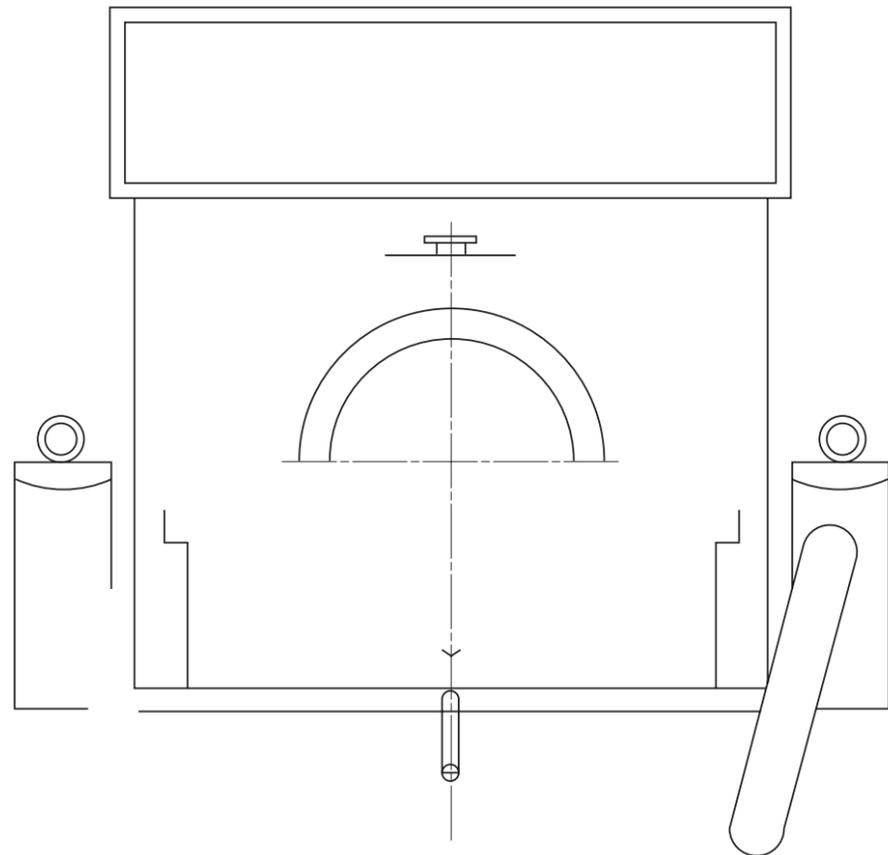
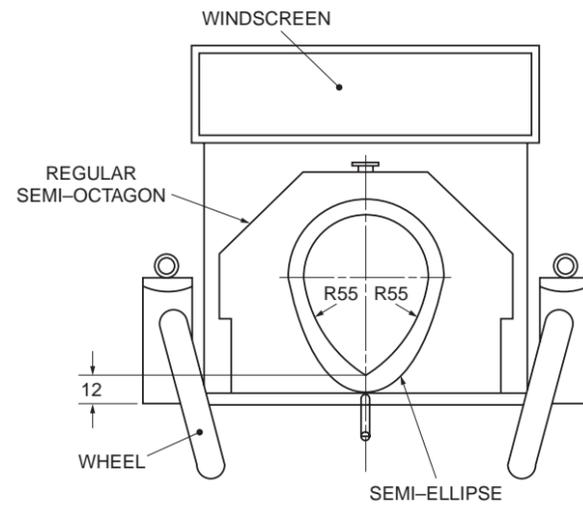


1 An advertisement for a National Car Museum is to include an illustration of an old car shown in the sketch to the right.

Complete the full size drawing of the illustration below by:

- (a) drawing the other wheel; [5]
- (b) drawing the semi-octagon; [5]
- (c) constructing the semi-ellipse; [5]
- (d) constructing the two inner arcs of the radiator; [5]
- (e) drawing the letters **N C M** in a suitable style on the windscreen of the car; [7]
- (f) colouring **part (e)** only. [3]

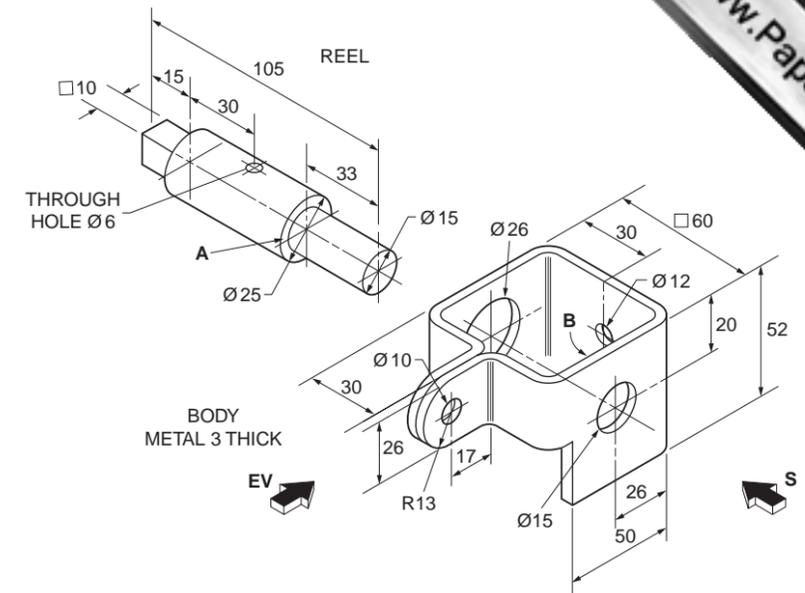


2 An exploded pictorial drawing of a tensioner for a wire fence is given to the right. The reel fits through the 26 mm and 15 mm diameter holes in the body so that the shoulder **A** of the reel is in contact with the surface **B** of the body.

- (a) Draw to scale of 1:1, in either first or third angle orthographic projection, the following views of the two parts assembled:
 - (i) a sectional view taken through the centre of the body looking in the direction of the arrow **S**; [13]
 - (ii) the end view looking in the direction of the arrow **EV**; [8]
 - (iii) the plan. [7]

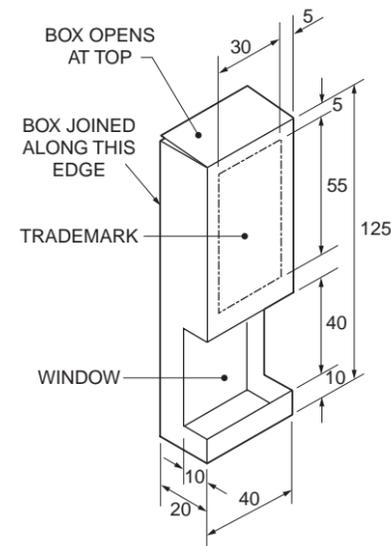
Hidden detail is not required in any view. Dimensions not shown are left for you to decide.

- (b) In the space indicated, draw the symbol for the angle of projection you have used for your drawing. [2]



DRAW THE SYMBOL FOR THE ANGLE OF PROJECTION USED HERE.

3 A thin card package for a child's toothbrush is shown to the right. The package is to have the company trademark in the rectangle indicated on the front. The name of the company is **ROCKET**. There is a window in the front of the package through which the toothbrush can be seen. In the answer spaces indicated:



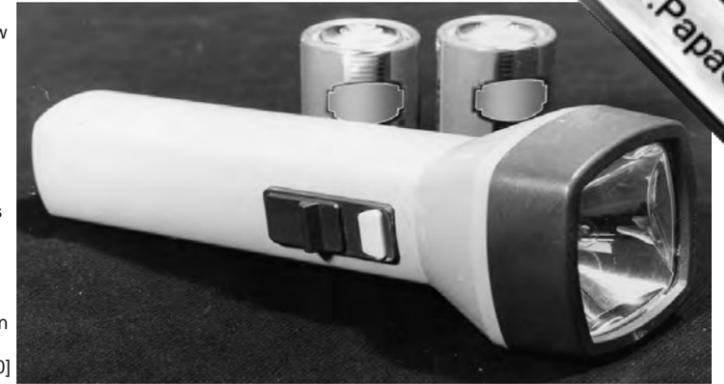
- (a) sketch **two** ideas for the trademark which **must** represent the name of the company; [4]
- (b) complete the full size, one-piece development of the package. Part of the front of the package has been drawn for you. Include all gluing and other flaps; [18]
- (c) draw accurately your chosen design for the trademark on the development; [5]
- (d) colour the trademark only. [3]

ANSWER (a) HERE

ANSWER (b) HERE



4 Orthographic views of the parts of a torch are given. A photograph of a **similar** torch is also given. The photograph is intended to show the assembly of the parts of the torch; details and sizes must be taken from the orthographic drawings. The torch is to be sold with an instruction leaflet showing how the torch is taken apart, so that either new batteries or a new bulb can be fitted.



Note: The bulb fits in the bulb holder and the bulb holder fits in the 24 mm recess in the casing.
The reflector clips in the casing with the lugs L in the sockets S of the plastics ring T.

In the space below, **sketch freehand**, approximately half full size an **exploded isometric** view of the torch with the reflector to the front. Although two batteries are used in the torch, show only one in your answer. Detail should be shown simply and clearly. [30]

