PATENTS EXAMINATION BOARD

Subject: The Drafting of Patent Specifications - Paper 1

Date: July 2015

Time: 09h00 -13h00 (although candidates requiring extra time are entitled to an additional two hours)

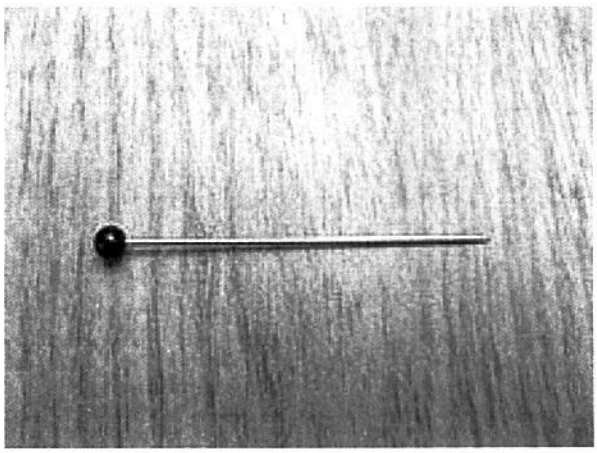
Examiners: J Fiandeiro
V Williams

Moderator: J D Whittaker

Question 1

Your client, Mr Johnny Rotten, is a famous Punk musician. Mr Rotten advises you that he has a particular fetish for sticking standard pins (as shown in figure 1) through his skin.

Figure 1



He tells you that one of the problems with a standard pin is that the sharp end often gets hooked or snagged by his clothing or limbs while on stage. He has found this to be such a distraction that on one occasion he

forgot the lyrics to the song he was performing. He tried sticking soft bits on the sharp end to stop the snagging but he found it didn't work that well. In the end, he created what he calls a 'safety pin' (as shown in figures 2 and 3 in 'open' and 'closed' conditions respectively) which, seemingly, has solved the snagging problem entirely. Being a sharp entrepreneur, he believes his invention could also be used to 'fix' his torn jeans and even hold a cloth nappy in place on a baby.

Figure 2

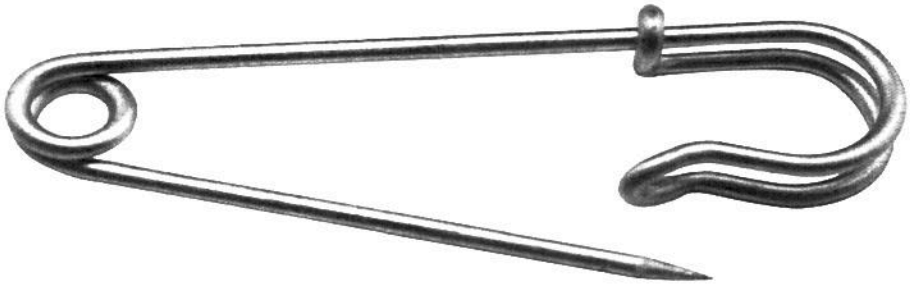
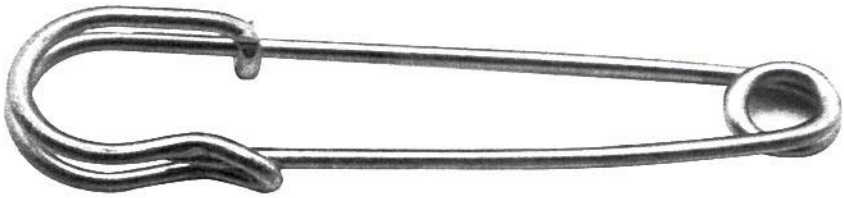


Figure 3



You are required to identify the inventive feature(s) of the invention, and to draft up to three claims to protect the invention.

Question 2

Your client hands you the following write-up and drawings for his new invention.

"It has been found advantageous, necessary, and desirable to mount the

exhaust pipes and mufflers vertically on diesel engines so that the smoke, fumes, and oil residues are directed upwardly. This mixes the impurities of the exhaust stream with cleaner air at a higher more remote level, directs it away from the vehicles behind the truck, and attempts to direct it away from the truck body. The higher the stack rises above the truck cab and body the better are the beneficial results.

However, there is a limit to how high a pipe exhaust stack may rise above the truck cab due to clearance limitations such as, for example, clearance limitations under bridges, and entrances and exits in garages, factories and warehouses. Thus, the fixed stacks have been kept lower than desirable for handling exhaust streams. The lower handling of exhaust streams is problematic in that, apart from anything else, the diesel engine exhaust residues build up rapidly on the truck cab and body, and are difficult and relatively expensive to remove. There is therefore a need for better handling of the exhaust streams.

Attached are drawings of a hinge connector according to my invention. In the drawings, FIG. 1 is a side elevation view of a truck equipped with my hinge connector; FIG. 2 is an enlarged cross-sectional view along the line 2-2 in FIG. 1 and showing my hinge connector from above; FIG. 3 is a side elevation view along the line 3-3 in FIG. 2 (with the top and bottom pipes broken away and showing the swung down position of the top pipe in dotted lines); and FIG. 4 is a cross-sectional view along the line 4-4 in FIG. 2 (with the top and bottom pipes broken away).

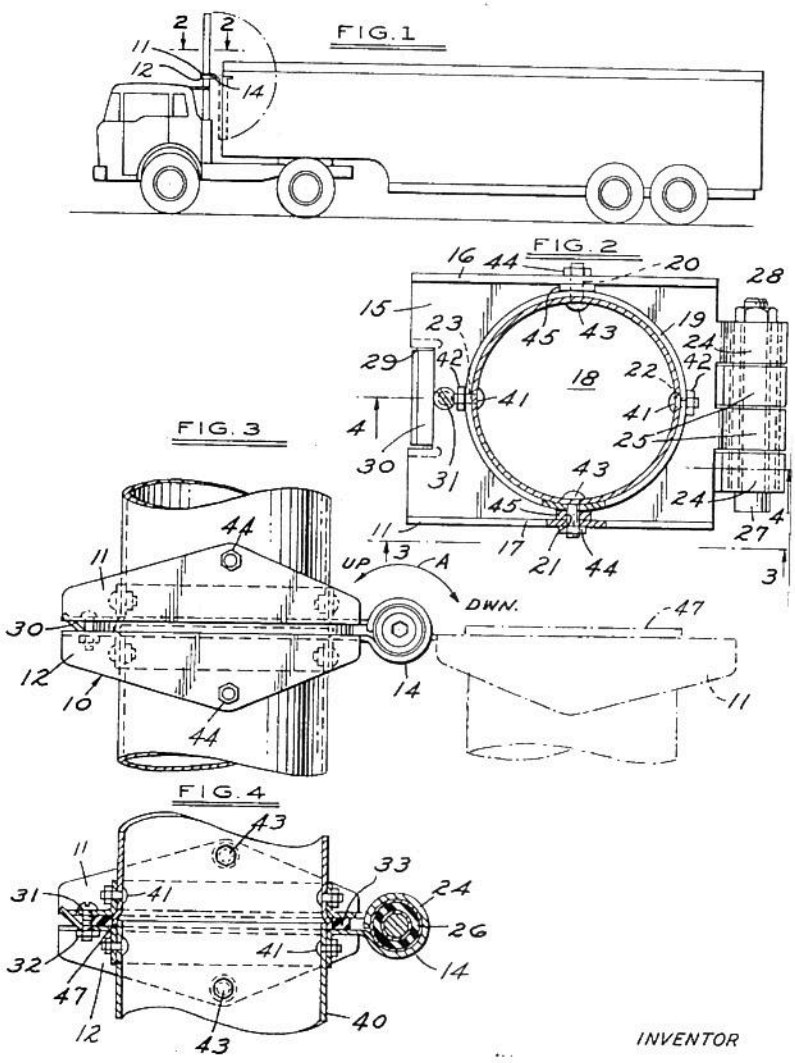
With reference to these drawings, the hinged connector 10 according to my invention comprises a top portion 11 and a bottom portion 12 connected by a hinge portion 14. Each portion 11 and 12 has a flat plate portion 15, paired triangular outer side flanges 16 and 17, a central aperture 18, and an annular flange 19 surrounding the aperture 18. The side flanges 16 and 17 have bolt holes 20 and 21 respectively, and the annular flange 19 has bolt holes 22 and 23. Each plate 15 has paired spaced and staggered hinge arms 24 and 25 which are formed in annular loops. A resilient bushing 26 having an axial aperture is pressed in the loops of the arms 24 and 25. A bolt 27 lies in the aperture of the bushing 26 and pivotally interconnects the top and bottom portions 11 and 12. A nut 28 is threaded on the bolt 27. At the end of one plate 15 opposite the arms 24 and 25, such as on the top portion 11, a notch 29 is lanced out and a mating tongue 30 in the other plate 15 is arranged to lie in the notch 29 as a key. Each plate 15 has a bolt hole adjacent the notch 29 and tongue 30. A bolt 31 lies in these holes and a nut 32 holds the top

portion 11 and bottom portion 12 together with the tongue 30 and notch 29 engaged. A gasket 33 lies between the plates 15 and seals off the space between them.

The top portion 11 and the bottom portion 12 are identical except for the tongue 30 and notch 29, and this allows them to be made from the same tools and dies.

The connector 10 is mounted on the bottom pipe 40 with hinge portion 14 toward the rear of the truck. The bottom pipe 40 is then drilled with bolt holes to match the bolt holes 22 and 23 in the annular flange 19, and the bolts 41 are secured in the bolt holes 22 and 23 with nuts 42. The bolts 43 are then secured in the bolt holes 20 and 21 of the triangular flanges 16 and 17, and in corresponding bolt holes in the bottom pipe 40, with a spacer 45 positioned between the bottom pipe 40 and each of the side flanges 16 and 17, and with nuts 44. This mounts and secures the hinged connector 10 on the bottom pipe 40. The top pipe is similarly connected to the top portion 11. The top pipe may have a bell portion 47 fitting over the other pipe (see FIG. 3).

The top pipe is locked in an upright position with the bolt 31 and the nut 32. In this position, the top pipe allows exhaust fumes, etc. to be discharged at a higher, more remote level, with the benefits described above. However, the bolt 31 and the nut 32 are easily removed to allow the top pipe to swing down to a lowered position, indicated by the dotted lines in FIG. 3, in the direction of the arrow "A". Thus, the top pipe may easily be raised for road travel, and easily lowered, when necessary, to avoid obstacles with vertical clearance limitations."



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