

## Worn Wheel Spanner? Repair it!

**You must be able to undo wheel nuts.** Even if you never suffer a puncture it is advisable to remove the wheels each year to clean and lubricate the splines. This has two benefits, it confirms that the nuts are fully tightened, and prevents rust from developing. Splines can be damaged by driving with wheels which are even slightly loose and splines can become rusty if loose wheels allow ingress of water. Rusty splines can become firmly jammed, making the wheel impossible to remove – remember that rust occupies more than nine times the volume of the iron it is formed from! That's why rusting re-bars can cause extensive spalling on steel-reinforced concrete motorway bridges. There have been cases of wheel hubs splitting under the expansive forces of rusty splines. So remove your wheels and grease your splines once per year!

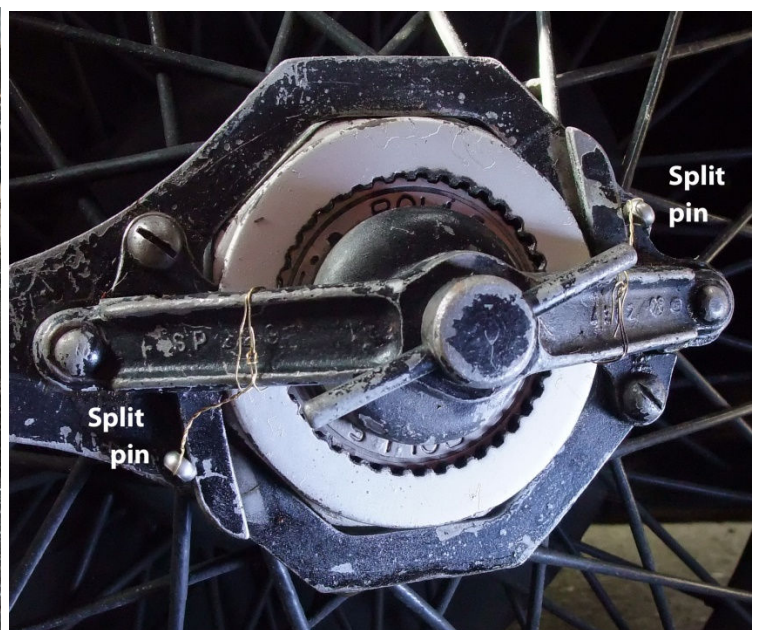
With that in mind, nothing is more frustrating than a wheel spanner which flies off the nut when you hit it with a heavy hammer. It is also dangerous; 1.6 kg of flying steel can damage car and person. I have just such a wheel spanner. It is nearly 90 years old, well worn and well bashed but tricky to use because of its tendency to fly off the nut.

Looking at the spanner, the swivel pieces seem to be worn just where they grip the nut. Instead of being flat the edges have become chamfered, see **A** in photograph 1. I could imagine the shock of a hammer blow would allow the nut to push the swivel pieces open (even though they are held closed by small springs hidden under each end of the arch piece).

This could be rectified by dismantling the spanner and restoring the worn edges by welding and grinding, but this would require quite sophisticated workshop equipment. I decided to prevent the swivel pieces from being forced open by holding them in place with a split pin each. As shown in the photographs, I chose robust stainless steel pins and drilled holes **B** (in my case 4.8mm diameter) so that the pins fitted the holes snugly and were held against the swivel pieces when the spanner was in place, see photograph 2.



Photograph 1



Photograph 2

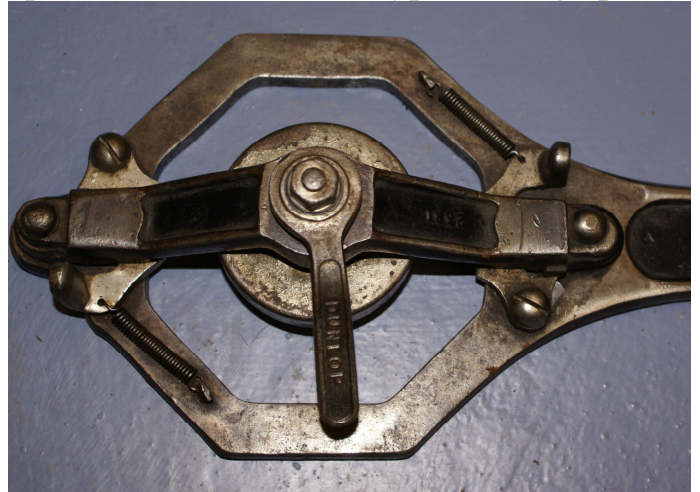
The result was most satisfactory. Now, when I remove and replace my wheel nuts there is absolutely no tendency for the spanner to fly off. The holes in the spanner would hardly be noticed by a concours judge!



There are two types of 20hp wheel spanners, both with internal springs, see Photograph 3 (courtesy of Peter Charlton). The Phantom wheel spanner is different again (it has external springs) and as it fits the 20hp wheel, some 20hp owners will have this type, Photograph 4.



Photograph 3 Two types of 20hp wheel spanners



Photograph 4 Phantom wheel spanner



Another tip; to prevent damage to the beautiful nickel-plated wheel nuts, cover them with a piece of thin chamois leather before fitting the wheel spanner, see photographs left.

