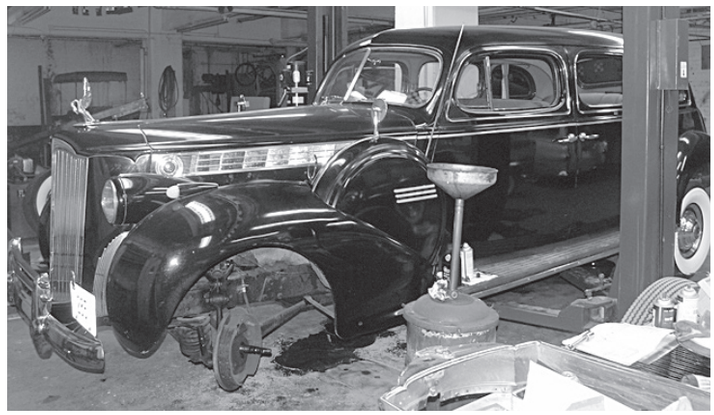
King Pins

You can do this!

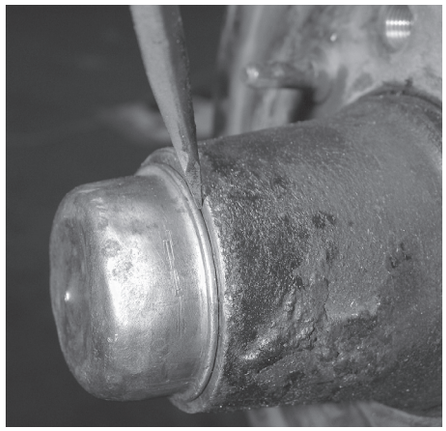


By West Peterson / Photos by the author

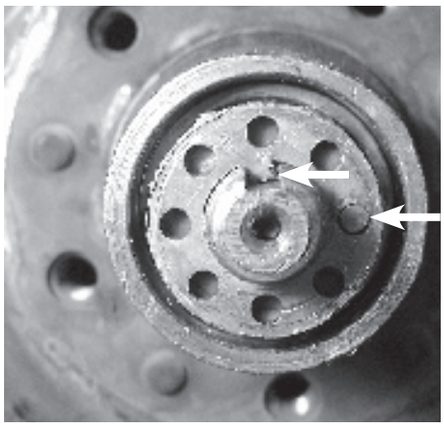
Once the tie rod ends were replaced on our 1940 Packard Super 8 (see July/August issue), we proceeded to replace the king pins. The need to tackle these two jobs came about while we were changing the car's oil. After 45 years sitting in a museum, we were curious about what all might need to be done before turning this 50,000-mile car loose on the highway. The horizontal play in the front wheels revealed the need to replace the tie rod ends, while vertical movement told us that the king pins were worn as well. As mentioned in the first installment, vertical movement could also be the indication that a hub nut is loose, but with six eyes focused on the king pin, we could see from where the problem originated.

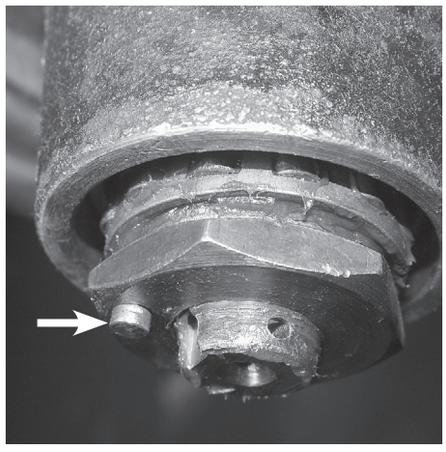
While we had the complete hub assemblies torn apart, it made perfect sense to repack inner and outer wheel bearings and replace the seals. Not that it wouldn't have made perfect sense to do it anyway.

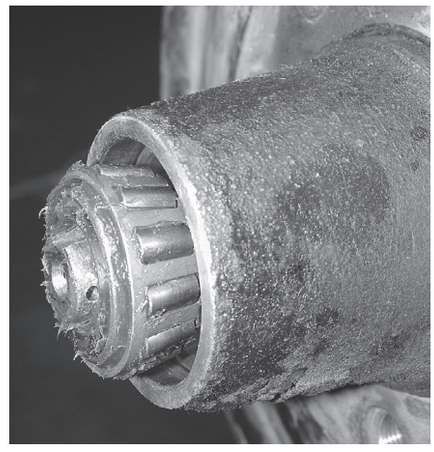
Assuming that everyone knows how to remove a wheel, we'll jump right into pulling the hub apart. Removing this little grease cap merely entails wedging a screwdriver between the hub and the cap and prying it off. Wrapping a channel locks around it and twisting back and forth will work as well, but you need to be careful not to crush it.



Behind the cap is a nut, a washer with an inner tab and alignment holes, and another nut with a button that locks into one of the washer's holes and helps secure everything in place. Once the nuts and washer are removed, the bearing will easily pull out. Now the brake drum is ready to be removed.

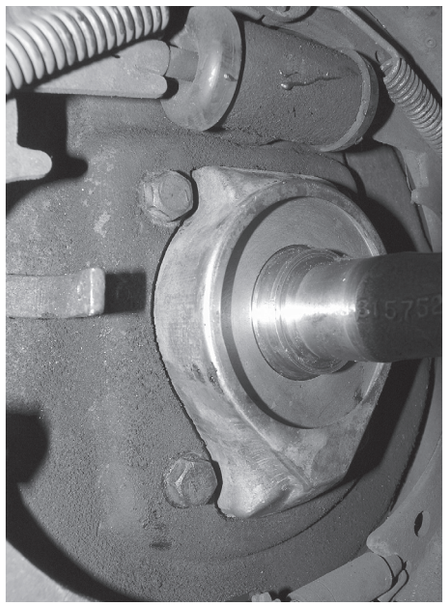


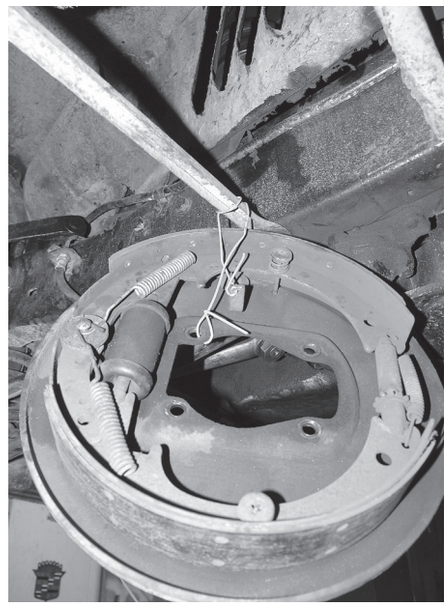




Normally, at this point, we would disconnect the hydraulic brake lines before further disassembly. However, this car had a recent brake job performed and there was no need to upset a job we felt was done well. The four bolts holding the backing plate on need to come off first. There are castle nuts and cotter pins on the reverse side, which also hold the spindle arm to the backing plate).

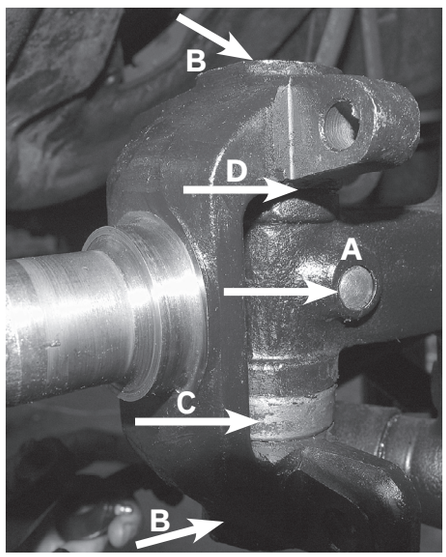
Since the flexible hydraulic brake lines were still connected, the brake assembly needed to be secured so the brakes lines weren't supporting its weight. We used a coat hanger and hung the brakes from a fender brace.

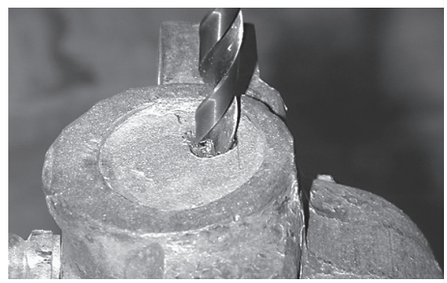




With the axle spindle and king pin assembly revealed, we began to extract the worn king pins. The elements include the horizontal lock pin (A), the upper and lower end caps (B), the thrust bearing (C), spacer (D) and the king pin itself.

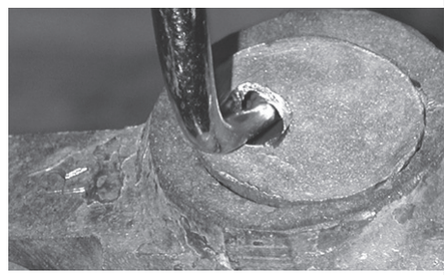
The way to remove the upper end cap is to drill a hole in it, and pry it off.



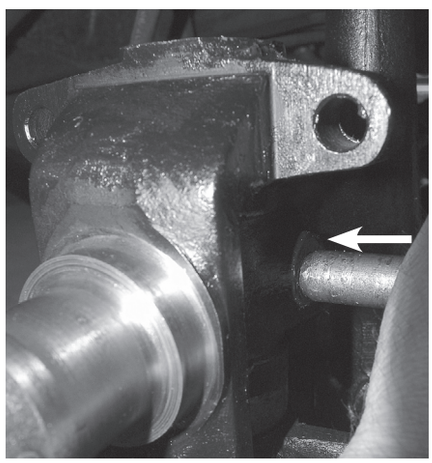


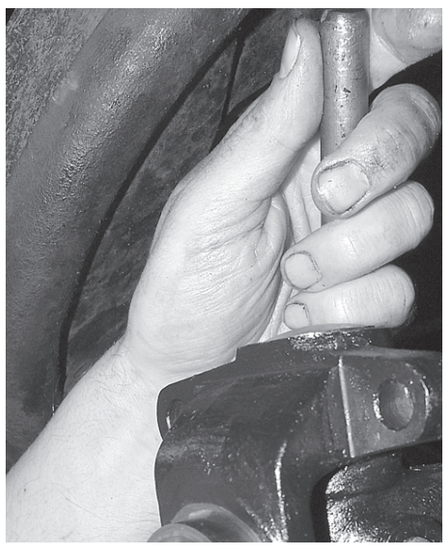
The lock pin must then be driven out, before the king pin can be driven out. Note: The lock pin bores are tapered, and are removed through the back on the right side of the car (passenger side) and through the front on the left.

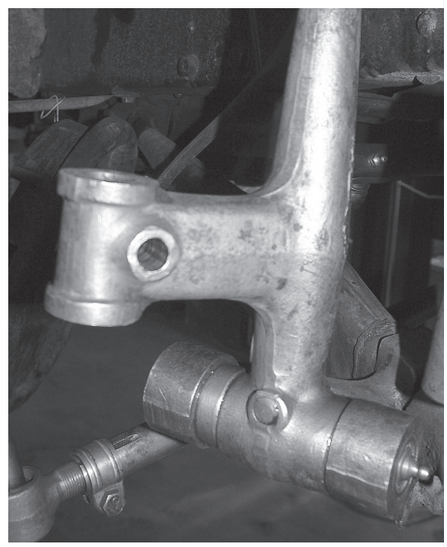
While tapping the king pin out of the axle bore, the lower end cap will come out at the same time.

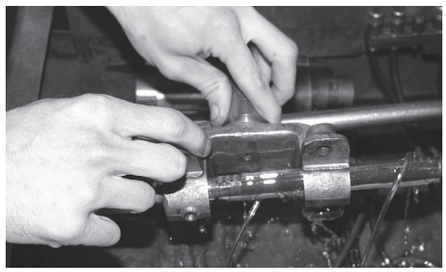


Once the king pin has been extracted, the spindle can be removed from the king pin assembly.

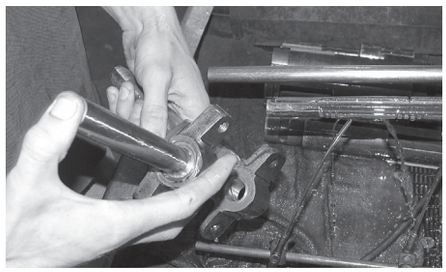




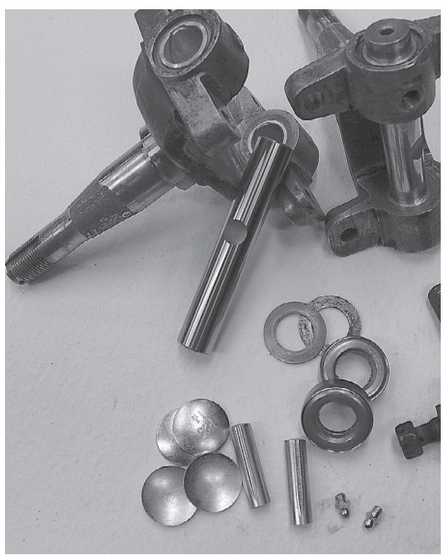




This tool, supplied with the new king pins, was used to drive out the old brass bushings from the axle bore. We sent the new set of brass bushings to a shop and had them pressed into place.



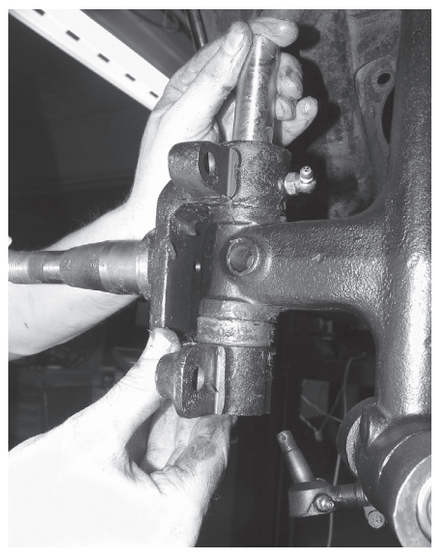
Reaming them to proper size afterwards was also done professionally. This is not difficult work if you've got the proper equipment, but not everyone has these types of tools at their disposal. Here we see the bushings being reamed, and the new king pin being set into place to check for proper fit. The proper fit should allow for swivel with around five pounds of torque applied.



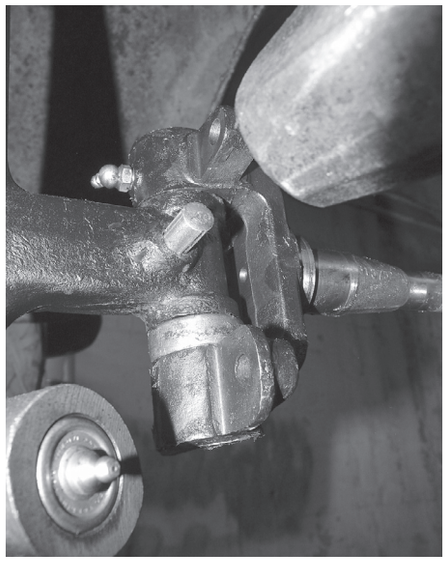
With the bushings in place, we were ready to re-assemble. Here, all the new parts are ready to install, including new bushings pressed in place, king pins (notched where the new lock pin will hold it into place), spacers, thrust bearings, grease fittings and end caps.

We did a "dry run" with all the new pieces. The new thrust bearing was a little taller than the old and would not allow for proper fit, and the new spacers were not properly sized either. Because the old bearing and spacers were perfectly good, we decided to reuse them. From this point on, cleanliness is important.

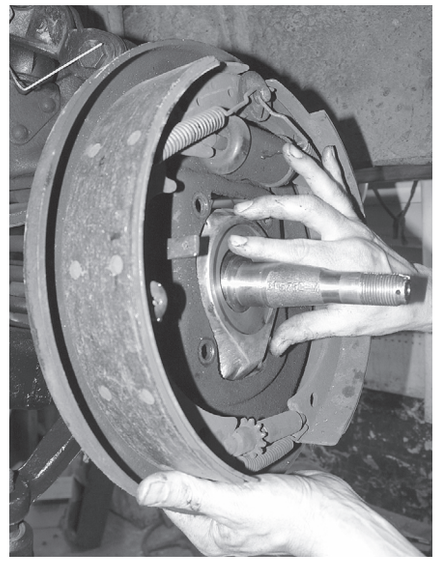
We liberally applied grease to the old thrust bearing and spacer, which held them into place. We also greased up the king pin itself, before we carefully tapped it into place through the axle spindle, carefully aligning the notch into position with the lock-pin bore.



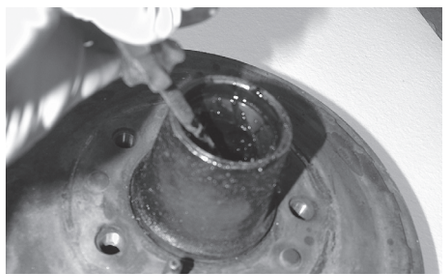
With the notched king pin aligned perfectly, we tapped the new lock pin in securely. Remember, the bore is tapered and we're driving it in opposite the way we drove it out. At this point, tap in the new end caps. We found it easier to install the bottom end cap before starting the re-assembly process.



Putting it back together is little more than putting the pieces back the same way in which they came off. Here we replace the complete brake assembly.



Before we replaced the brake drum, we elected to repack both the inner and outer wheel bearings. The outer bearing set came out before the drum was removed. The inner bearings need to be tapped out from the inside of the drum. The wheel bearing seal will drop out at the same time.



After cleaning and checking the bearing race (the bearing contact surface pressed into the hub) for wear or burn marks (blueing of the metal) and finding them okay, we lightly tapped it, alternating from side to side, back toward the outside of the hub.

Thoroughly clean the bearings in solvent and then blow dry with compressed air. Never spin the bearings with compressed air, doing so runs the risk of nicking the rollers. To pack them, put a wad of appropriate high-temp axle grease in the palm of your CLEAN hand and push the bearing through it several times, as shown. Work the grease through the bearing rollers, and continue until it oozes out the other side.

Drop the inner bearing back into place, narrow end of taper first.