

William Penn

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Jammed Gear Change

If the driver reported that, having engaged the lowest gear, he had experienced the greatest difficulty in shifting the lever back to neutral, what steps would you take to set matters right?

WERE I placed in this predicament I should investigate the cause of the defect. There are several possible causes, and I will endeavor to explain them. In a vehicle which is fitted with a ball or roller clutch thrust race, and at the same time has no clutch stops fitted, the male portion of the clutch cone is left free, and I am doubtful if the defect could ever be produced. Assuming the same vehicle to be fitted with clutch stops, or a brake to the clutch cone, the trouble can be produced, for just as the pressure of the engine when driving will keep the teeth of the gears bearing so hard on one another that the speeds cannot be changed, so when the engine is declutched and the momentum of the car driving the gears, the clutch brake many act similarly to make driving and driven teeth press hard against each other. Particularly is this the case if the clutch stop is allowed to become dry. Only if the load could be released off the gear tooth, could the lever be returned to the neutral position. To take the load off the gear tooth the clutch must first be re-engaged and then depressed, but not sufficiently far for the clutch to come to contact the clutch stops. At the same time the gear lever should be brought back to the neutral position. It is surprising how tightly a gear will jam if the clutch stops which contact the clutch cone are allowed to become dry. This difficulty can be entirely obviated by attention. I find it necessary for the clutch

stops to be adjusted 5-16 in. to $\frac{3}{4}$ in. from the clutch cone face. The spring of these clutch stops must not allow for too positive an action; also a little grease should be placed between the clutch stop face or on the face of the clutch cone, so that, when declutching takes place to engage the gear, the cone is brought to gradual stop. The idea of the clutch stop is to check the clutch cone from spinning when gear changing.

The same effect may be produced by using bronze blocks to operate the clutch. These, if allowed to become dry, will act as a positive brake to the clutch cone. There are other faults, which sometimes occur through bad or rough usage of the clutch, as, for instance, a twisted spline or square shaft on which the sliding gear works. Ever such a slight twist to this shaft will prevent a well fitting sliding gear working along it. The remedy for this, in most cases, is a new shaft. There is yet another way this defect will manifest itself. Assuming you are hill-climbing on first gear and the vehicle is stopped in the middle of the hill with the side brakes, the driver declutches fully to attempt to bring the gear lever to the neutral position. He will probably find it very difficult; in some cases impossible. The way to overcome this difficulty is to re-engage the clutch momentarily and move the vehicle a few inches ahead. Then declutch, and apply side brakes again, but on this occasion do not declutch far enough to contact clutch stops—leave the clutch cone free so that there is



JAMMED!

"But what happens if your engine stops in the air—What happens? Can't you get down?"

"That's just what happens, mum. There's two Huns up over in France now with their engines stopped. They can't get down; so they're starving to death."