pounds into pence!

BMW gearbox

WE'VE heard about inflation but when a small 15p spring could cost £30, perhaps we should just recommend buying tranquilisers instead. And it can happen: if, for instance, the footchange arm return spring on a BMW gearbox should snap, being jammed in whatever gear happened to be engaged at the time will be only the first frustration!

There will be a sigh of relief when it's discovered that a replacement spring costs only 15p and an ashen face when the poor unfortunate is informed of the unobtainable tools needed to renew that spring and the cost of the job. Only a BMW workshop has the tools, so only they can repair the bike, and the rider must pay . . .

However, if the rider really begrudges paying out labour costs for work he could comfortably do himself, there is a compromise.

Only two special tools are needed to remove the drive flange, so the cheapest method is to take the gearbox off the bike; transport it to your friendly local BMW dealer and get him to detach that tight-fitting flange. The rest of the strip and all the rebuilding is a straightforward do-it-yourself job.

Even if you had to set up camp on the pavement outside BMW's to strip the box (it has been done!) and take in the only bit that needs their special extractors it would be worthwhile. A gawking audience is rather encouraging, we're told, and it makes you want to get away that much faster . . !

strip sequence

To start with, you can take off the tank to give yourself a little more light, but we managed quite well without removing it.

Disconnect the carburettor hoses on each side, secured by three jubilee clips, and proceed to remove the right- and left-hand carburettors (**1**).

With a flathead screwdriver, take out the air filter cover retaining screw (**2**) and lift out the air filter.

Using an Allen key remove two of the four gearbox bolts (**3**). Also using an Allen key, a third bolt is accessible inside the air filter housing; the fourth is a 12mm nut on a stud undone from the right-hand side.

Undo the 10mm nut retaining the battery earth connection and speedo drive (**4**). Also slacken off the shaft gaiter clip.

Holding the gaiter back and using a flat 10mm ring spanner (**5**) undo the four drive-shaft coupling bolts. Remove both black swinging arm caps and undo the stud lock nuts on the swinging arm with a 27mm socket (**6**), withdrawing the studs with an Allen key.

Undo the 17mm nut to release the bolt-on brake pedal pivot (**7**); this allows it to fall out of the way to pull the rear wheel back (**8**) separating shaft from gearbox. Remove the clip from the spindle which holds the clutch operating arm and push the spindle through (**9**), so releasing the arm.

Pull apart the neutral indicator terminal (**10**) on the left-hand side. Take off one 10mm nut from the rubber 'cotton reel' at the side of the battery, allowing movement of the battery which enables easier extraction of the gearbox.

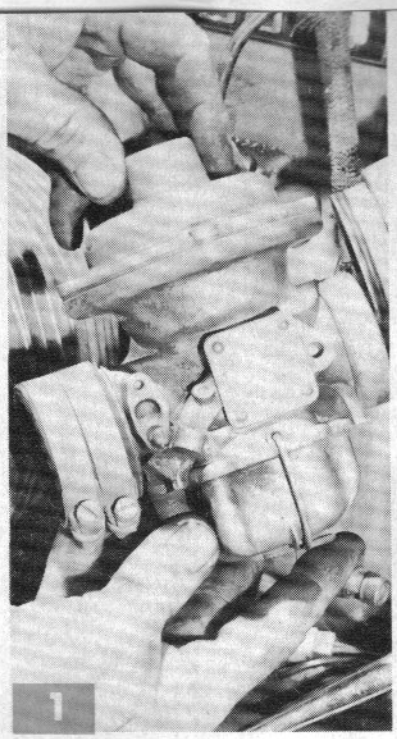
Lift out the gearbox (**11**) and take it to your local BMW dealer where, with the aid of the special 'tool', the gearbox flange will be removed (**12**).

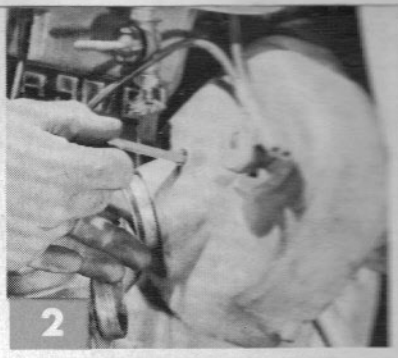
Back to your own devices and with an Allen key, remove the nine bolts on the gearbox cover. Using a blow-lamp (**13**) apply heat to the gearbox cover to expand the alloy and enable the cover to be released. (Also use heat for reassembly).

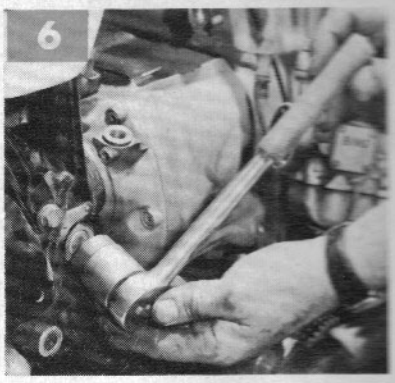
Next drain the oil; then remove the two 13mm camplate retaining bolts (**14**) and using an Allen key, undo the bolt (**15**) and pull out the gearchange lever. Lift out the camplate assembly (**16**). (NB: On reassembly, line up the selectors in the appropriate camplate slots).

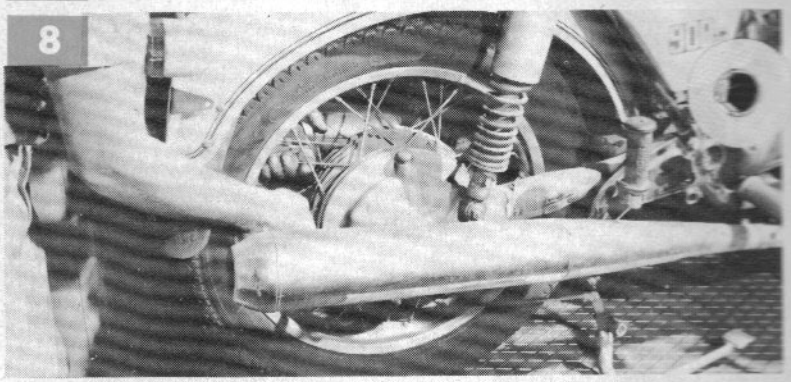
Using circlip pliers, remove the camplate spindle circlip (**17**) and lift off the smaller of the two camplates.

At this point, either position the return spring arm into 1st or 5th gear or mark the camplates to ensure accurate reassembly. Remove the circlip (**18**) from the return spring spindle and behold — the broken spring (**19**)! What a way to go!

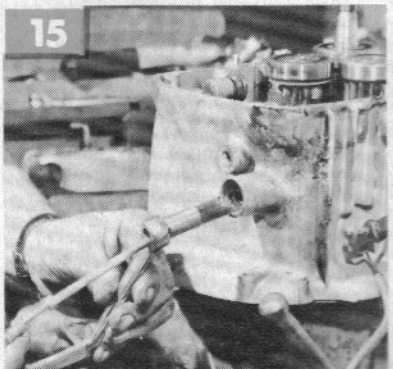

1

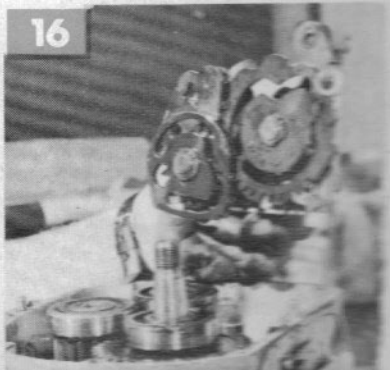

2


6

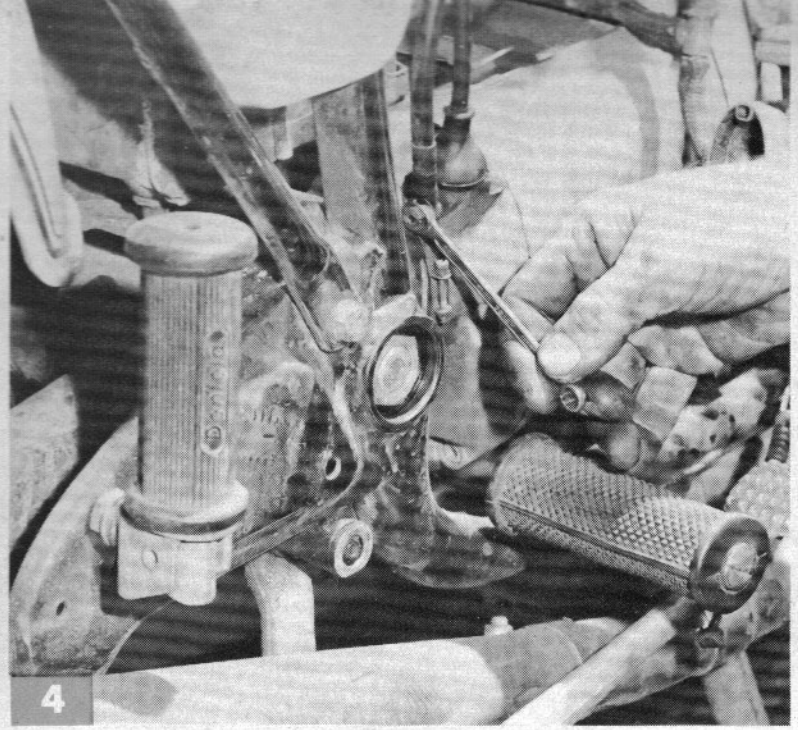

8

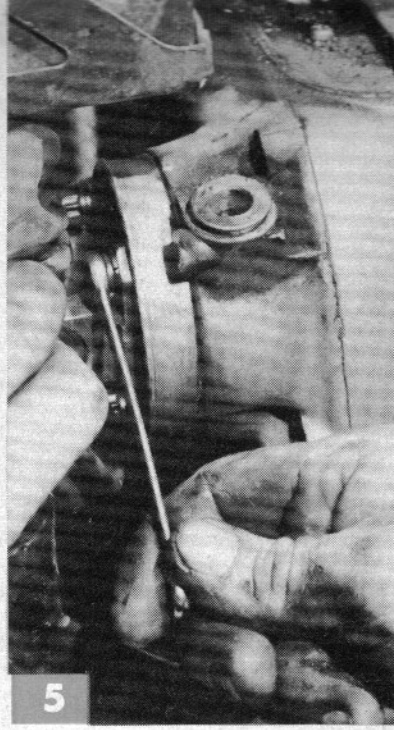

12


15

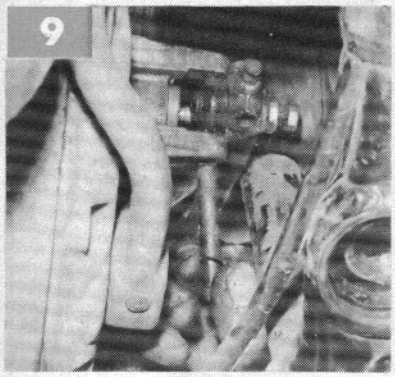

16

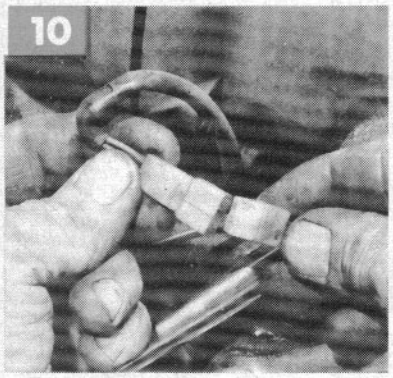

3

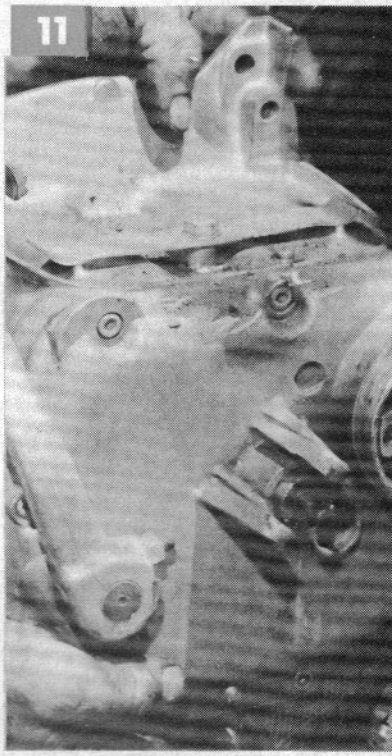

4


5

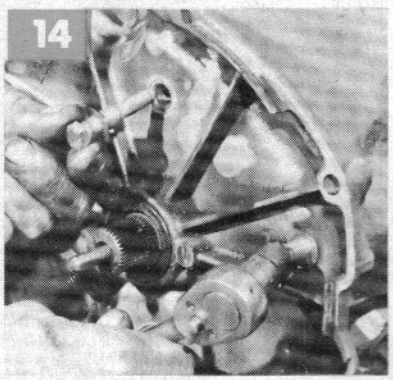

7

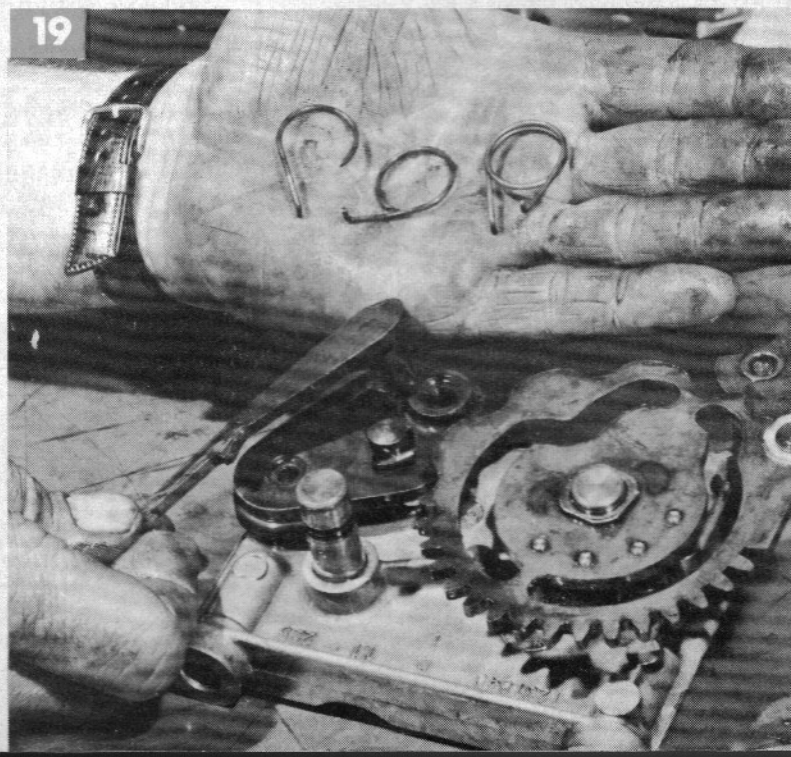

9

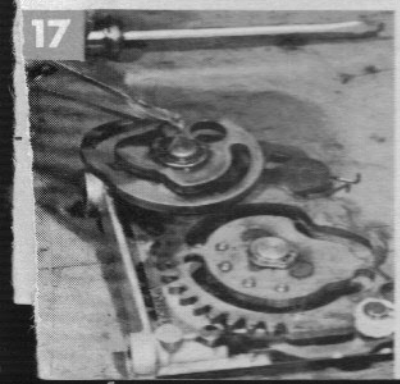

10

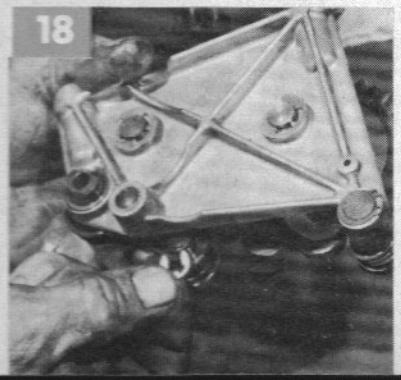

11


13


14


19


17


18