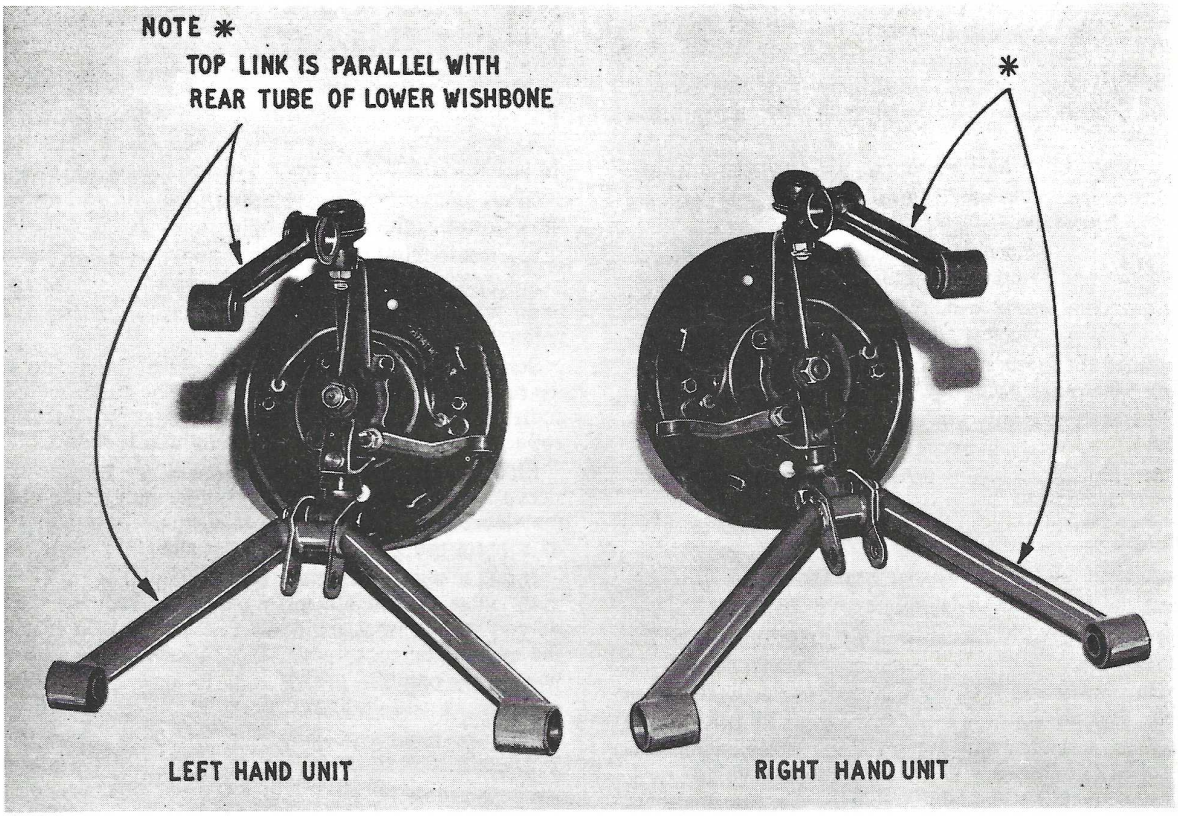

Fig. 1—Front Suspension Assemblies.

Special Note:

It should be noted that before tightening the Nyloc nuts on the suspension attachment points to the chassis, i.e. those where the wishbones and top arms pivot about the metalastic bushes, the weight of the vehicle should be resting on its wheels in normal ride condition. This will avoid imposing undue torsional stresses on the bushes—a condition that could well arise should the nuts be tightened with the vehicle on chassis stands and the suspension assemblies in an extended attitude.

7—Rack and Pinion Steering.

Removal:—

Separate the tie rod ball joints from the steering arm taper holes.

Remove the four Nyloc nuts from the bottom of the rack and pinion mounting brackets.

Withdraw the bolts and separate the two halves of the rack and pinion mounting brackets.

Remove the pinchbolt securing the steering column universal joint to the pinion shaft and withdraw the rack and pinion assembly from the engine bay.

Dismantling:—

Slacken the rubber gaiter retaining slips, pull the inner end of each gaiter from between the clip and the rack tube, then slide each gaiter towards the outer ball joint.

Slacken the locknuts and unscrew each outer tie rod from the rack. Withdraw a coil spring from each end of the rack.

Turn back tabs of tabwashers, then slacken and remove the sleeve nut, tabwasher and thrust pad from each outer tie rod inner ball joint.

Slacken the locknuts and unscrew each outer ball joint assembly from their respective tie rods.

Remove the locknut, rubber gaiter, clips and cap nut from each outer tie rod.

Remove the locknuts and clips from each end of the rack.

Slacken and remove the cap nut, shim pack, coil spring and pressure pad.

Slacken and remove pinion retaining nut, shim pack and pinion shaft complete with bush and thrust washer.

Remove and discard the "O" ring seal from the retaining nut.

Withdraw the rack from the tube.

Remove thrust washer and bush from the pinion housing.

Inspection:—

Thoroughly clean all components.

Examine the bushes in the end of the rack tube for wear and damage. If necessary renew them, pressing the new bushes into the tube, the first with the innermost

edge of the bush 1.75 in. (44–45 mm.) in, the second with the nearest edge of the bush flush with the end face of the tube.

Fit a new "O" ring seal to the pinion retaining nut.

Examine the rack and pinion for wear or damage. Renew as necessary.

Examine the pinion thrust washers and bushes for wear or damage. Renew as necessary.

Examine the thrust pad and inner ball joint of each outer tie rod for wear or damage. Renew as necessary.

Examine the outer ball joint assemblies for wear or damage. Renew as necessary.

Check each cap nut for wear or damage. Renew as necessary.

Check that the rack tube or outer tie rods are not bent. Renew as necessary.

Assembly:—

Insert bush and thrust washer into the pinion housing.

Insert the rack into the tube.

Insert pinion with thrust washer and bush into the pinion housing.

Adjust pinion and float as follows :—

(a) Fit the pinion nut with an excessive amount of shims, screwing the nut until the pinion end float is just eliminated.

(b) Utilizing feeler gauges, ascertain the clearance between the inner face of the pinion nut head and pinion housing.

(c) Remove the pinion nut and remove from the shim pack a number of shims equal in thickness to the pinion nut/pinion body clearance plus .008 in. (.2 mm.).

(d) Leaving the remainder of the shims in position, fit and tighten the pinion nut. The pinion should now have .008 in. (.2 mm.) end float. If the float is unsufficient or excessive, remove or add shims as necessary.

Fit the pressure pad and cap nut, screwing down the nut until pressure pad end float is just eliminated.

Utilizing feeler gauges, ascertain the clearance between the inner face of the cap nut head and pinion housing.

Obtain a shim pack equal in thickness to the cap nut pinion housing clearance plus .004 in. (.1 mm.).

Remove the cap nut and fit the shim pack to its threaded shank.

Insert the spring into the pinion housing followed by the cap nut, tightening the nut.

Screw a locknut and fit a clip onto each end of the rack.

Smear the inside of each cap nut with grease and fit them to their outer tie rods followed by the rubber gaiters, clips and locknuts.

Screw the outer ball joint assemblies on to the outer tie rods until the distance between the outer ball joint centre and the tie rod ball joint centre on one side is equal to that on the other, then tighten locknuts.

Fit a thrust pad smeared with grease, new tabwasher and sleeve nut to each outer tie rod inner ball joint. Tighten the sleeve nut, then bend over alternate tabwasher tabs to contact the sleeve nut and cap nut.

Insert a coil spring into each end of the rack. Screw each outer tie rod assembly on to the rack so that the tie rod ball centres are equal spaced on each side from the end of the rack tube. Tighten locknuts.

Note :—Maximum lift of ball in cup to be .002 in. (.05 mm.) Ensure that the ball joint moves freely.

Pull the inner end of each gaiter onto the rack tube and retain in position by tightening the clips. Tighten the clips that hold the gaiters to the outer tie rods.

Position the steering wheel in straight ahead position.

Rotate the pinion shaft throughout its whole movement, from stop to stop, counting the number of revolutions. Rotate the pinion from a stop half the total number of revolutions, thereby centralizing the rack.

Fit the steering column, entering the splined pinion shafts into the splined coupling checking that steering wheel is aligned straight ahead at centralised position of rack.

Locate the rack and pinion assembly in the engine bay onto the positioned mounting brackets. Place the bracket cap with its locating dowel entered into the corresponding hole in the rack tube. Bolt up.

Connect up the ball joint tapers into the steering arms and lock up with nyloc nuts.