

Under
The Light Car
Microscope

THE B.S.A. SCOUT

with a felt lining. This serves to retain oil and also cushions the column to some extent. At the lower end the column carries an ordinary straight-toothed pinion which engages with an internally toothed sector. The latter turns on a spindle to which the drop arm is attached by splines and a pinch bolt.

This simple mechanism is housed in a circular casing and the bearing bush which carries the lower end of the column is eccentric, so that by turning it, the correct mesh of gears can be set. The entire steering column and gearbox assembly is supported at two points.

One of these is at the lower end and amounts to a trunnion which permits proper alignment of the column. Passing horizontally through the frame side member is a bolt with an enlarged head through which a hole passes at right angles to the bolt. On the steering gearbox are two lugs which sandwich this bolt head and a second bolt passes through the whole.

Steering Rake Adjustment.

At the top end of the column two tubular stays are attached to the dash and carry a larger tube with a felt lining which, as already explained, forms a bearing for the column itself. The connection between the stays and the bearing tube is by means of a lug brazed to the latter and provided with two transverse holes. The bolt which clamps the stays to the lug can be put in either of the holes, so that two different positions for the steering wheel are available.

Turning to the other end of the car, the rear axle is a simple affair connected to the chassis by means of an ordinary half-elliptic spring on each side. Silent-bloc bushes are used both for the spring shackles at the rear end and for the spring pivot or front anchorage.

As to the axle itself, there is a substantial steel tube placed below the centre of the wheels and connected to the spindles by means of a well-ribbed bracket at each end. In addition to the wheel spindle, each bracket carries the brake shoe pivot and the brake camshaft. Formed with it is the pad to which the road spring is attached by a pair of U-bolts.

Embracing the axle tube immediately below each side member of the chassis is a bracket which serves a double purpose. It carries a rubber pad which softens the impact if the frame goes right down to the axle when

passing some particularly bad bump in the road. It also forms a connection for the arm and link of the Luvax shock absorber which is used to control each rear spring.

The rear wheel spindle is a simple affair held firmly in a taper hole in the bracket by means of a castellated nut with a split pin. The other end of the spindle also is tapered and carries two ball bearings on which the hub rotates. The hub has a flange with four studs which pass through the brake drum and carry the wire-spoked wheel.

The Brakes.

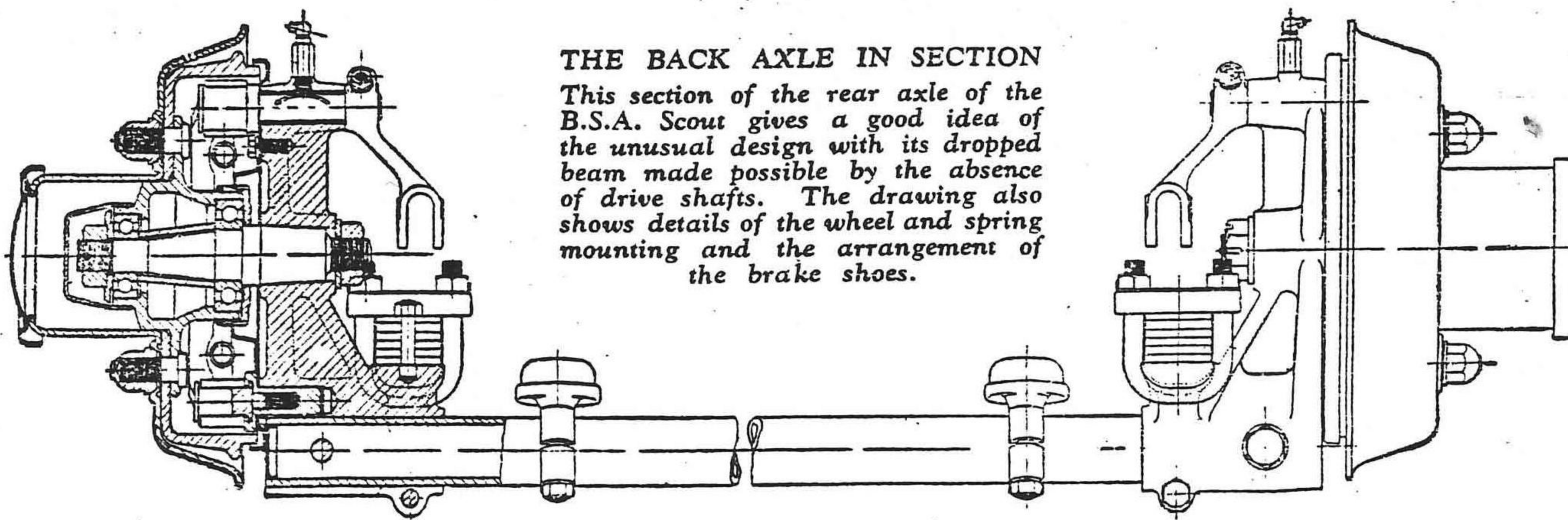
Following thoroughly conventional lines the brakes have two shoes in each drum with a cam to expand, or operate, them. The aluminium shoes are pivoted at their lower ends and a simple flat-faced cam is placed between the upper tips, which are steel faced for durability. Two stiff helical springs draw the two shoes together.

The other end of the brake camshaft carries a lever connected by rods to the brake cross-shaft. For the front brakes the arrangement is similar except that the rod terminates in a flexible Bowden-type cable which allows for the steering movement of the wheels.

All four rods are operated by levers on the two ends of the cross-shaft, which is mounted close to the front end of the rear springs. It is connected by a short rod to the brake lever which is pivoted to the frame cross-member just in front of the cross-shaft which, of course, is in the centre of the chassis.

Near the off side a longer rod passes forward to connect the brake pedal to the cross-shaft. It will be realized that all four brakes are operated either by the pedal or by the lever. Adjustment by thumb nuts is provided at each wheel and also at the pedal and at the lever. These latter adjustments affect all four brakes equally.

Those who have read the three instalments of this description of the B.S.A. Scout will have realized that, although it is a distinctly unusual car, it is unconventional only where there is some good reason for departure from the orthodox. Its designers have endeavoured to provide the advantages of front-wheel drive in a light and economical car. That they have been successful cannot be disputed.



THE BACK AXLE IN SECTION

This section of the rear axle of the B.S.A. Scout gives a good idea of the unusual design with its dropped beam made possible by the absence of drive shafts. The drawing also shows details of the wheel and spring mounting and the arrangement of the brake shoes.

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