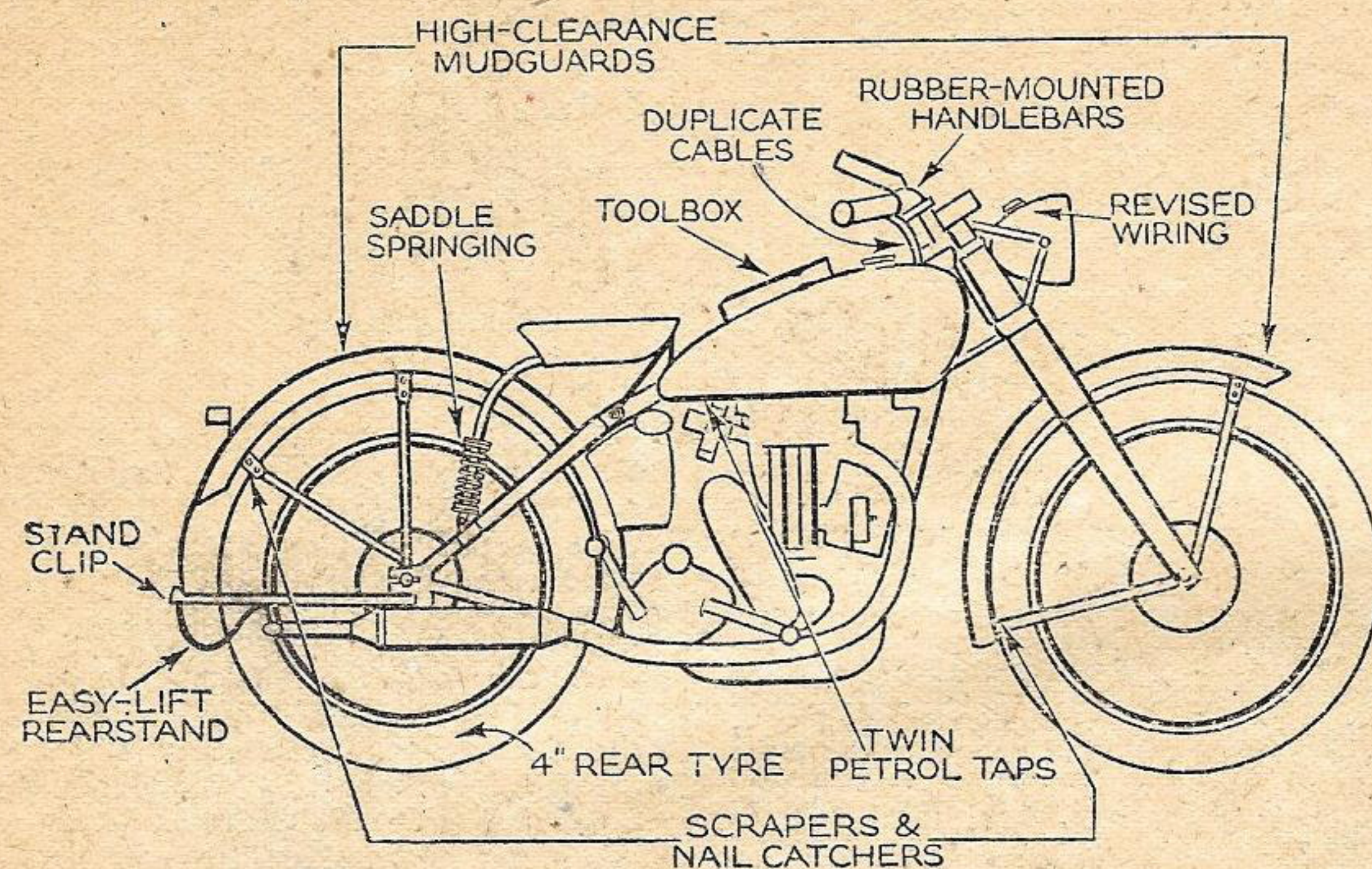


"The Perfect W.D. Machine"—



The main points of alteration and improvement seen at a glance. At the front end of the back mudguard the clearance between it and the tyre is as great as possible. The mud-scraper and nail-catcher at the rear is adjustable for position, to suit chain adjustment

I HAVE what is, in my opinion, practically the perfect W.D. machine. Perhaps "perfect" is pitching it a shade high; what I mean is that it is not only incomparably more satisfactory from the rider's point of view than the standard W.D. machine, but also that it could be put into quantity production to-morrow without any appreciable delay in the supply of machines to the Forces, because there are no revolutionary alterations—it's just a sound standard design, with all the little things seen to, those little things which make so much difference to the man who actually rides the motor cycle.

In "A Little Nearer," June 17th, 1943, issue of *The Motor Cycle*) and "More Simplified Wiring" (*The Motor Cycle*, September 30th) I described some of the alterations that had been made to my 350 c.c. G3/L Matchless. The more important of these were:—

Twin petrol taps—to obviate the necessity for draining the tank before removing it.

Duplicate clutch and throttle cables.

Captive filler caps.

Raised saddle position.

4in. rear tyre.

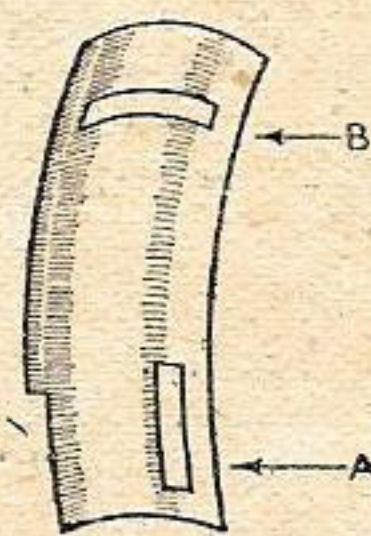
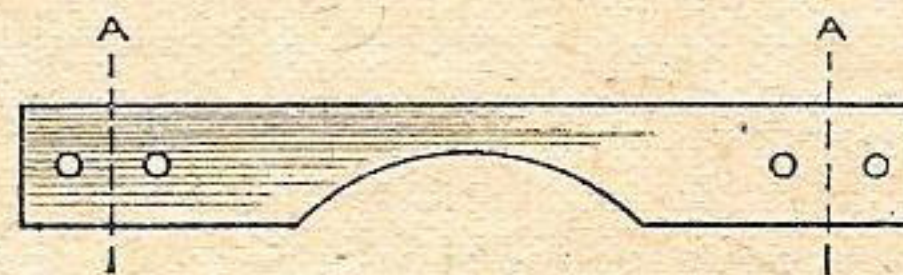
Revised lighting system—only one wire between battery and head lamp, and only 14ft. 6in. of wiring cable, all accessible, in place of 27ft. 6in., mostly inaccessible.

All these alterations, except those to the lighting system, were carried out at odd intervals during the Tunisian campaign; the lighting system was revised just after the campaign. Then came a "static" period which, with the fortunate conjunction of a really co-operative L.A.D., enabled me to complete the schedule. (When I tell you that the staff sergeant of the L.A.D. is Alec Bennett's son you won't be surprised that it is co-operative!)

The first items to receive attention were

the mudguards. Many, and I amongst them, have written feelingly of Tunisian mud, but, while more than unpleasant, it is not unique, and I was determined that never again would I suffer the nightmares of clogged mudguards and locked and sliding wheels, which were such a feature of wet weather in North Africa. So clearance, and plenty of it, was obviously the order of the day.

The front mudguard was a fairly straightforward proposition. A U-shaped bridge was made of mild steel to fit inside the top of the front mudguard, and long enough to project 1½in. below the edge of the guard on each side; this was bolted to the guard, and the original stays (which were bolted to the blade of the guard itself) were bolted to holes drilled near the bottom of the U on each side. This lifted the guard well clear of the tyre on the exit side, which is, of course, the important thing. The central bridge, which fixes the guard to the forks, was cut on each side, halfway between the

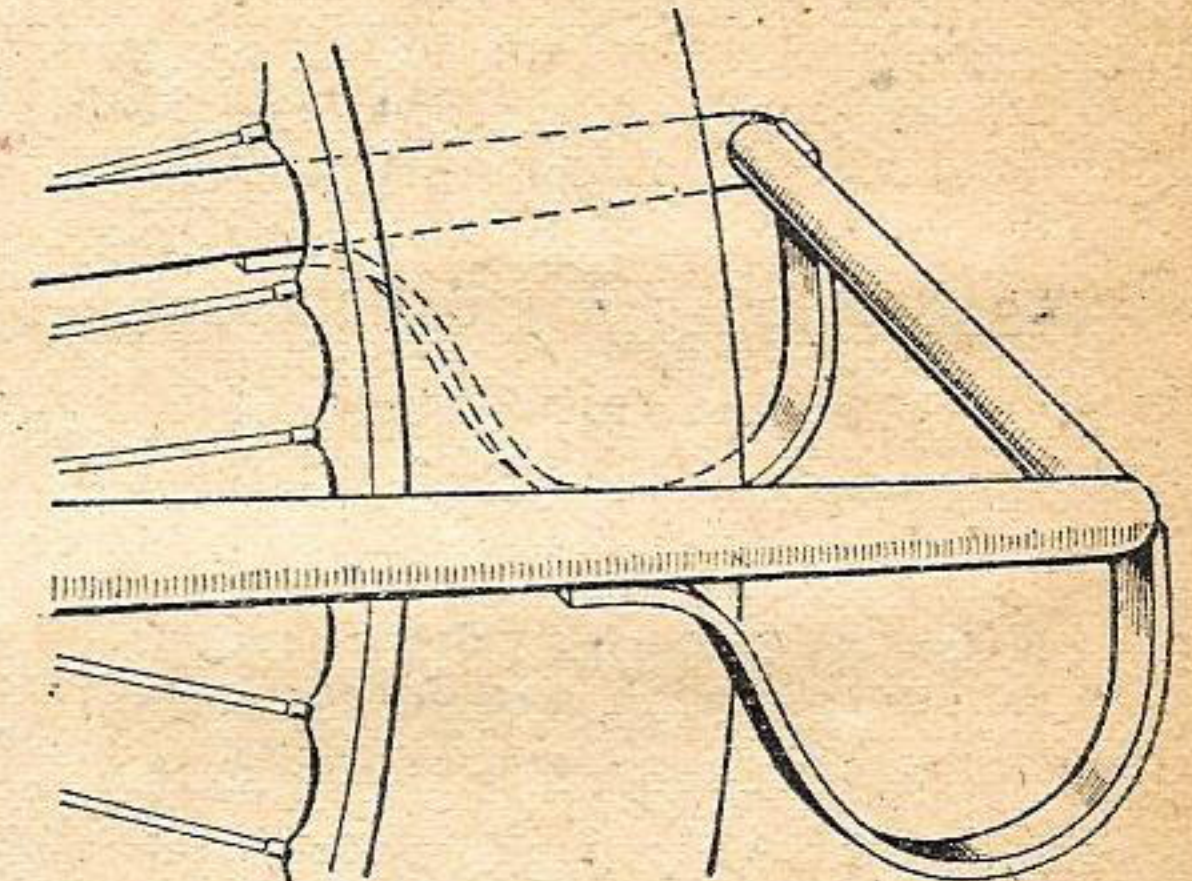


Top: The steel strip mud-scraper and nail-catcher cut to shape before being doubled over at the points "A." Bottom: To obtain greater clearance, two slots had to be cut in the front portion of the back mudguard at "A" and "B" respectively to accommodate the return oil pipe and seatstay bridge piece

— Is What Lt. C. V. Jarratt Claims to Have Approached : Details of Further Modifications Carried Out on His W.D. "Teledraulic" Matchless

rim of the guard and the fixing holes, through which screws secure it to the forks, and pieces of strip the necessary length were welded in. The front stand, which, of course, provides the remaining stay, was left unaltered, because, after all, close at the entrance and wide at the exit is what you want.

Only one thing remained to be done, and that was to fit a combined mud-scraper and nail-catcher; this was made of 1½in. x ¾in. strip, curved to fit the tyre, as shown in the sketch, doubled over at the points marked (a), and bolted to the front stand so that it is about ¼in. clear of the tyre. It does not, of course, affect the use of the stand in any way.



Conversion of the rear stand to one of the easy rolling type by welded-on curves of strip steel

The rear mudguard was rather a different matter. It is in two parts, one part running from the cross-piece which joins the two chain stays just behind the gear box up to and just beyond the cross-piece which joins the two saddle stays below the saddle; the other part runs from there to the tail of the machine. To get the extra clearance it was necessary to cut a slot at (a) as shown in the sketch to accommodate the oil return pipe (this seeming simpler than making up a new oil pipe), and another crosswise at (b) to take the saddle-stays cross-piece. It was then possible to fix this lower portion of the guard so that the very bottom was in front of the chain-stays cross-piece instead of behind it, and the saddle-stays cross-piece was sunk into the mudguard, instead of in front of it; it was fastened here by a simple saddle-shaped piece of strip instead of being bolted through the cross-piece.

The rest of the mudguard was very simply dealt with. To avoid making fresh

bridges (mild steel strip is *very* difficult to find in North Africa) little extension pieces were made, 2½ in. long, with a ¼ in. hole drilled ¼ in. from each end, the bridge being bolted to one end and the stay to the other; with the bolts done up tight the fixing is completely rigid. A scraper and nail-catcher, similar to the one for the front wheel, was fitted to the rear-most stay, slotted so that it could be moved backwards and forwards as the rear wheel is adjusted. That gave me mudguards which it is quite impossible to clog (I've already tried them out in some very juicy river beds) and which should save as well a good 75 per cent. of the punctures.

Gilding the Lily

There was one more job before I left the stand and mudguard department, and that was to convert the rear stand into one of the easy-rolling cam-action type. This was done very simply by welding on to each side of the rear stand a piece of mild steel strip, this time 1 in. x ½ in., as shown in the sketch. The results are most gratifying—a gentle pressure of the foot, and the bicycle just rolls on to the stand without any tugging or heaving. Just to gild the lily I fitted a clip (¾ in. x ¼ in. strip and a Norton prop stand spring clip) in addition to the usual spring, so that I should no longer have to choose between a stand with the pivot holes rapidly becoming oval, and one with them done up so tightly as to make the operation of the rear stand rather a matter for concentration.

The next job was a very small one—fitting a B.S.A. ignition lever. Like "Torrens," I've always disliked the short stubby type of ignition lever, and the ones fitted to B.S.A.s are outstandingly smooth, and just a nice length, 4 in. from centre to tip. To fit this I removed all the removable ignition lever parts from the combined clutch and ignition control body, hacksawed off the central boss and the shoulders, and fitted the B.S.A. clip just on the steering-head side of the clutch lever clip, with the ignition lever itself bent slightly S-shaped so as to clear the clutch lever clip. In this position the thumb retards the ignition and the first finger advances it, easily and accurately, with the left hand in its normal position.

Convenient Controls

Incidentally, the arrangement of the controls on the left-hand side of the handlebar is:—

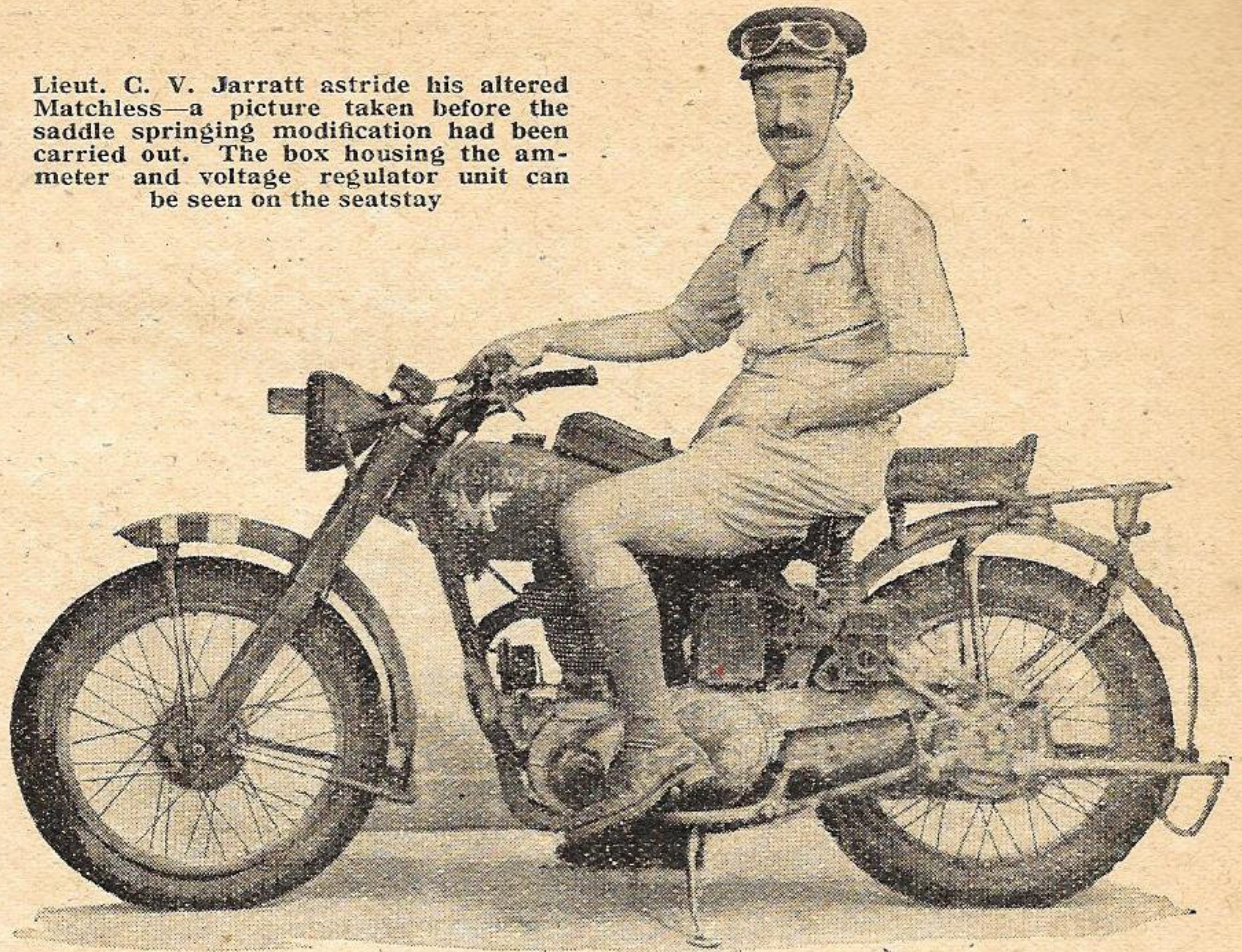
Next to the grip, the exhaust valve lifter, so placed that you can operate it *and* hold the grip tightly on a steep descent.

Next, the horn button, convenient to the left thumb, leaving the right hand free for throttle and front brake.

Then the clutch, and lastly the new long ignition lever; all four can be operated without ever moving the left hand from its normal position round the grip.

After this, rather illogically, I fitted new handlebars; but in the Army you have to do things when you can, and not in accordance with a set plan. So when chance threw a perfectly good and completely buckshee pair of Ariel handlebars

Lieut. C. V. Jarratt astride his altered Matchless—a picture taken before the saddle springing modification had been carried out. The box housing the ammeter and voltage regulator unit can be seen on the seatstay



in my way I promptly showed my appreciation of Providence by putting them to a good use. I'd always wanted rubber-mounted handlebars, and now I was going to have them, for although the Teledraulics even out the bumps very nicely indeed, and although the Matchless engine is very smooth throughout almost the whole of its range, a hundred and fifty quickish miles on African roads can leave your wrists a bit tired.

Fitting the Ariel bars was just a piece of cake; an old handlebar bend was cut down so that only a couple of inches protruded on each side of the central handlebar clip, which, on Matchlesses, is part of the steering head. A very little work ensured that the ends of the original Ariel handlebar clips which previously gripped the forks now gripped, with equal firmness, the cut-down handlebar bend, and by arranging the clips at an angle of 45 degrees to the horizontal the bars were just high enough and just far enough back to be, at any rate to my taste, perfection.

Another of "Torrens'" dislikes which I

share is for the conventional toolbox. There are three counts in my indictment of it:—

(1) Its shape is dictated by its position, and bears no relation to its contents.

(2) If the contents are not to rattle about in a most horrible fashion, which every good motor cyclist abhors, it is necessary to pack out all the odd corners with rags in the most meticulous fashion.

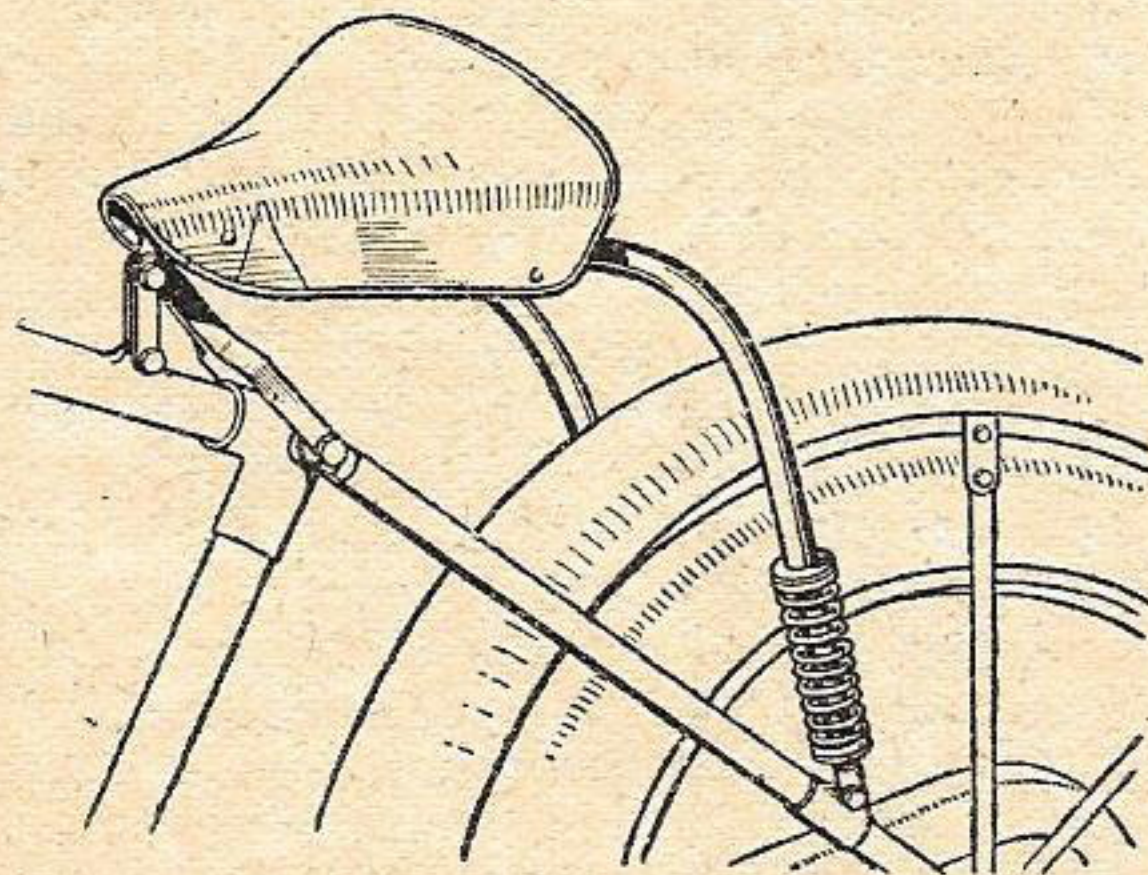
(3) Owing to its invariably vertical position it is necessary, on repacking the tools, to hold them in with one hand while you add the odd items and rags with the other—only to find that you've left one item just out of reach, and have to start all over again.

The answer seemed to be a leather toolbox on the tank top, so I bit the quartermaster's ear very carefully and he produced a nice large piece of sole leather. Out of this the equipment repairer made a good strong case, wedge shaped (that is wider at the front end than at the back) to conform to the curves of the tank, and 2½ in. deep, with a hasp so that it could be secured by a small padlock.

Rattleproof Toolbox

This was fixed to the tank top without resorting to the rather clumsy method of straps, by soldering four nuts to the tank top and bolting the bottom of the box to the nuts. The bottom of the box was covered inside with a thin metal sheet (yes, petrol can; how did you guess?), so that by bolting through this, and putting large washers between the nuts and the underside of the box bottom, the strain was satisfactorily spread, and there was no risk of the bolt heads pulling through. The comparative shallowness of the box and the raised handlebar position prevented any interference with use of the full steering lock.

Fitting this case had two advantages:



Higher mounting and greater movement for the saddle. The curved tubular saddle supports slide over rods which are pivotally mounted on the seatstays; long and comparatively soft springs are employed