

## Smooth and effortless



Modern road surfaces are generally good—but even so, if our front forks were rigid we would have a very uncomfortable ride, and use up so much energy absorbing the vibration in our arms that mileages would tumble and times would stretch alarmingly. So the front fork blades are curved to a carefully planned “rake” to provide resilience and so smooth out some of the road-roughness.

This is where Problem No. 1 crops up. The weakest point in a cycle tube is adjacent to the brazed joint, so we need the top of the fork blade to be rigid. Now Problem No. 2. When a tube is tapered, quite naturally its walls tend to thicken up as the diameter decreases. So now we have a typical fork-blade, where the top is of adequate thickness for rigidity, but the bottom is thicker than the top, thus partially defeating the effect of the rake, and killing some of the resilience!

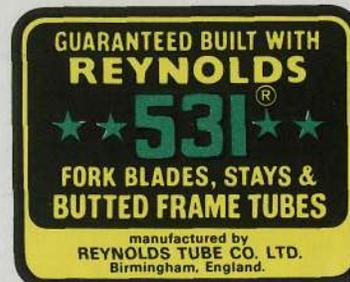
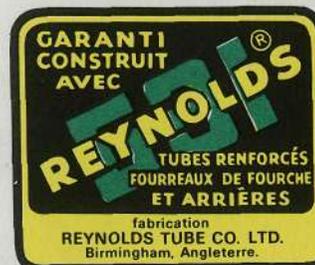
What can be done about this? Some cycle manufacturers use a lighter gauge fork blade, to get the resilience, and put a liner in the top, for rigidity, but by far the best solution is the taper-gauge fork. You will remember how Mr. Reynolds invented the Butting process, whereby the wall thickness of a tube could be increased at one or both ends without affecting the outside diameter. You will also probably remember that a fork blade starts life as a straight parallel tube. We take a light gauge tube of the right diameter, put in a single butt with a long gradual change of gauge, and then taper the end with the thinner gauge. Bent to shape, we have the Reynolds Taper Gauge fork blade, with a wall thickness less at the resilient end than at the rigid end. The result is that road shocks are smoothed, and more of your energy can be devoted to making the wheels go round, farther, faster, or with less fatigue.

We hope that these notes have helped you to a deeper appreciation of those unsung, uncomplaining, but so essential parts of a bicycle, the frame and forks. And perhaps when that green, gold and black REYNOLDS 531 BUTTED decal on your bike catches your eye, you will remember all the skill and all the devotion to the cause of cycling which lie behind it.

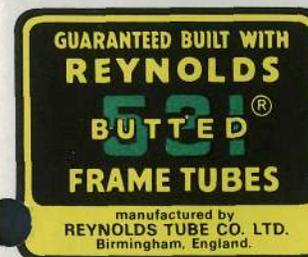
## Reynolds 531 transfers explained



Either of these transfers signifies that the bicycle is an aristocrat, a thoroughbred — with BUTTED frame tubes, plus seat and chainstays and TAPER-GAUGE fork blades, all in REYNOLDS 531.



This decal means exactly the same as the two above, and is a special design to be found on certain top-grade American-built machines.



The top-tube, seat-tube and down-tube of a bicycle bearing either of these transfers are REYNOLDS 531 BUTTED tubes. Stays and fork blades are not of Reynolds' manufacture.



Now rarely used, this transfer denotes a machine with REYNOLDS 531 fork blades and stays but only plain gauge REYNOLDS 531 frame tubes.