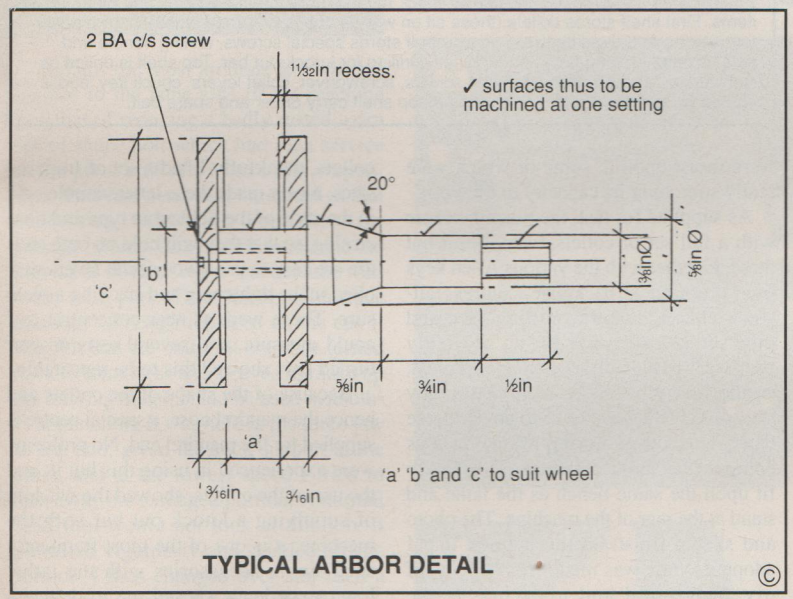
simple enough to make and very versatile in use since, mounted on the lathe cross slide for example, it can be oriented in all planes. I hasten to add that I would not grind on my lathe but would use it for drilling small holes with the small chuck such as that shown in the photographs. The vertical screw being ¼in. BSW and thus 20 TPI can be easily calibrated if required as can be the rotation of the base. You will have to silver-solder a short brass collar onto the ¼in. studding about 1in. from the top, this is ⅜in. dia. tapped ¼in. BSW. I put a brass washer below the handle, which in my case was just a piece of MS turned up to suit. Just a word on the keyway. This is a V section on the prototype which has much to recommend it since the key, which is simply held onto the slide by means of 2×4BA setscrews, can be adjusted to give virtually no rotation. Such a keyway is more easily milled on a horizontal machine and must be parallel to the column. A straight keyway will be adequate and a suitable key can be accurately fitted to the column in the same way.

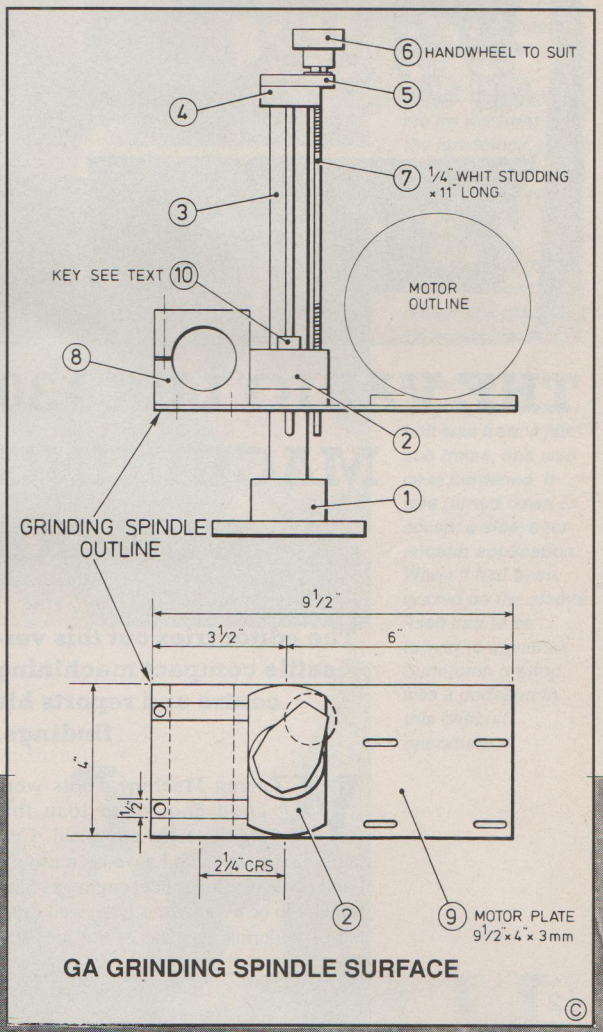
A 3,000 rpm induction motor will be required i.e. not series wound (brush) (most important), suitably wired for both forward and reverse direction and here also I strongly recommend that you consult a qualified electrician if you are in any doubt as to how to do it. There are so many motors on the market that I cannot give universal advice on connections but these should be available with the motor. Size will be a limiting factor and you will, I think, need about ⅛th HP, which should be more than adequate. The motor pulley has the same section as the spindle but is 2.4 in. dia. to give 4,800 rpm at the wheel, to suit a 4 in. cup wheel as the largest and lowest speed recommended for this spindle. I have used the heat sealed belting so universally available but also a V belt for which the angle of the V is 30 degrees.

A kit of parts to make both spindles is available from N.S.&A. Hemingway of Rochdale, see advertisement in this edition, at a reasonable price.

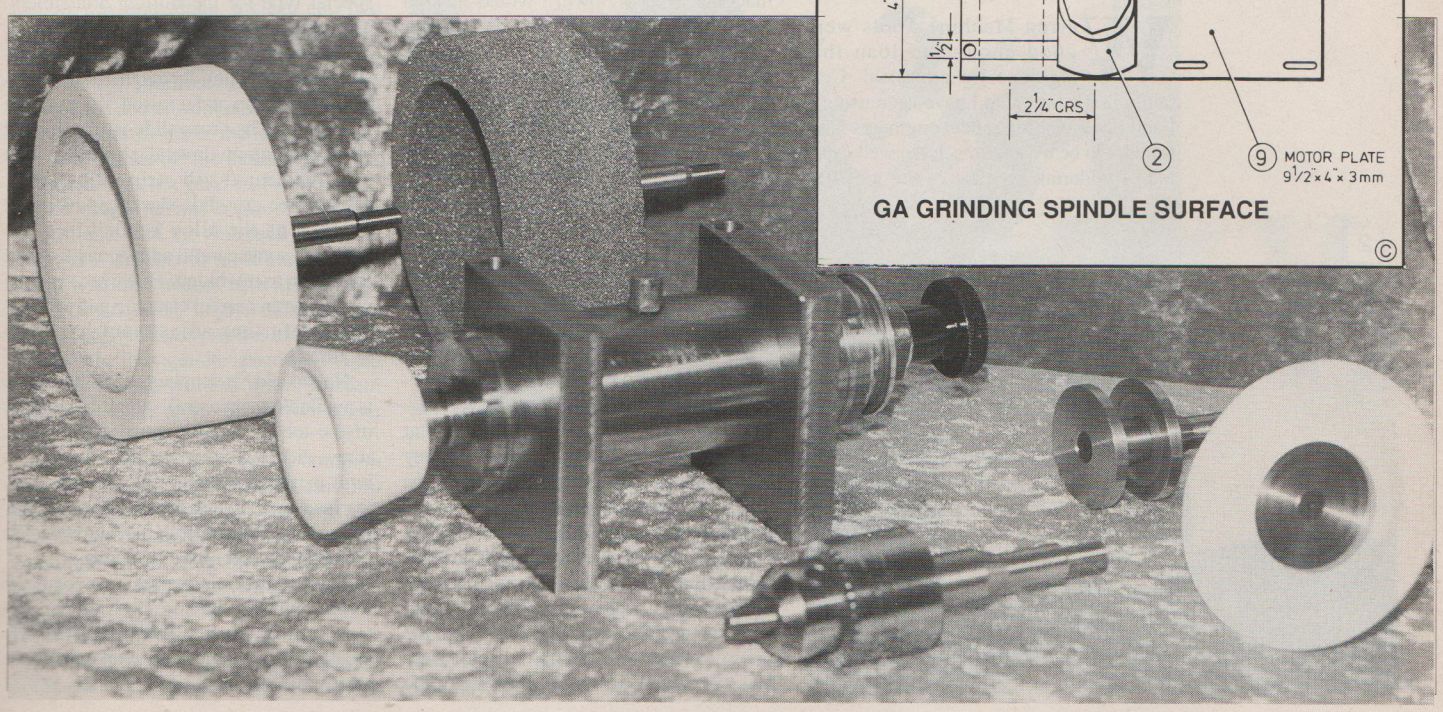
● *To be continued*



TYPICAL ARBOR DETAIL



GA GRINDING SPINDLE SURFACE



The completed grinding spindle, with a selection of arbor mounted wheels, a spare arbor and a drill chuck mounted on an arbor. This is the author's own unit.