

Motorising a Platen

by *H. L. Cox - ISPA News November 1962*

Some members, weary of treading their platens and dreaming of motorising them, may not realise how cheaply and easily that can be achieved.

Second-hand $\frac{1}{4}$ h.p. motors, quite powerful enough for a foolscap folio machine, are advertised every week in *The Exchange & Mart* at prices from 60s upwards. In addition, some form of reduction gearing will be required. Most A.C. motors revolve at about 1440 r.p.m., and the average platen turns four times per impression, so for a printing speed of 1,000 impressions per hour it will be necessary to arrange for the flywheel to revolve about 66 times per minute. The simplest way to arrange this is to have an intermediate set of pulleys between the motor and the machine drive.

Obtain a piece of hardwood about 10" x 6", one inch thick, and to this screw two more pieces 10" long, 7" high, on their sides about two inches apart. On top of these two uprights screw two plumber blocks (plain bearings) carrying a shaft on which, between the uprights, is a large V-pulley about 10" in diameter. On one end of the shaft, outside the bearings, goes a smaller pulley – plain or according to the drive on the machine. If the latter is of the "fast-and-loose" type a flat pulley and leather belting will be needed. If there is no machine drive it may be possible to take the belt direct to the flywheel, provided this has a flat edge; if it has not, then a large V-pulley should be bolted to the flywheel or fitted to the main shaft. A small V-pulley on the motor drives the large pulley on the intermediate assembly, the small pulley on the latter driving the machine. To work out the size of pulleys needed, remember that speed is directly proportional to the diameter. Thus, a 2" pulley driving a 4" pulley reduces the speed of the latter to one half.

The intermediate assembly should be screwed to the floor beneath the machine so that the small pulley and the machine pulley are in line and the connecting belt reasonably tight. The motor can also be screwed down, but in my own case I have found it an advantage to have two pulleys of different sizes

on the motor, giving alternative speeds. The motor is mounted on a wooden base, which rests on the floor against the base of the intermediate section, the weight of the motor itself keeping it in position. When the smaller of the two pulleys is in use the motor must, of course, be moved slightly further away, and a small block of wood inserted between the two bases keeps the belt tight.

Suitable V-pulleys of the "Picador" type can be obtained very cheaply from most large ironmongers, and in many large towns will be found a shop able to supply leather belting and flat pulleys if these should be needed.

When switching on, it is desirable to give the flywheel a start by hand, as this prevents belt slip, and takes the strain off the motor.